

**CITY OF ST. CHARLES**

**PROJECT MANAGEMENT MANUAL**

**DEPARTMENT OF  
PUBLIC WORKS**



Project Management Manual  
Revised 2012

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## 0 PROJECT MANAGEMENT DISCIPLINES

### 0.1 PURPOSE OF THE MANUAL

The purpose of the Department of Public Works Project Management Manual (PMM) is to document the Project Management System used to manage Public Works projects within the City of St. Charles. The entire Project Management System encompasses the administration, personnel, procedures, documents, tools, standards, and activities that are undertaken to manage projects in the Department, but this manual is intended to be the controlling document for the entire system. It formalizes a variety of formal and informal procedures that have been used by the Department and incorporates new practices based on industry standards for project management. The PMM describes in broad terms the project management process for all projects, and the details of management roles and responsibilities of staff involved with projects.

Following are the goals of the Project Management System described by this manual:

1. *Formalize the planning, executing, monitoring, and controlling of a Public Works project. These are the activities identified by project management professionals throughout the world as critical to the success of projects.*
2. *Provide a corporate wide, professionally accepted framework for managing the scope, quality, time, cost, risk and communications of Public Works projects. In so doing, the probability is increased that optimal solutions will be selected and that they will be implemented at the “right” time and at the “right” cost. The project management system is to be flexible and adaptable to the nature of the work being done.\**
3. *Establish clear lines of accountability/responsibility for project management decisions and the achievement of project objectives and deliverables. Clear lines of accountability/responsibility are required to facilitate optimal decision making, minimize misunderstandings and delays, and understand the causes of problems as they may arise.\**
4. *Explain project management principles and concepts that provide the foundation for the development of a project management framework.\**
5. *Provide instructions and guidance for the use of the project management tools that will be used by Public Works staff.*

*\*Adapted from the City of Edmonton Canada Transportation Dept.2006 Project Management Manual*

### 0.2 DEFINITIONS

City of St. Charles Boilerplate Standards – The City’s standard sections of the project specifications that describe project contract conditions outside of technical requirements.

City of St. Charles Survey Standards – The City’s requirements for the completion of topographic and boundary surveys.

Computer Aided Design (CAD) Files – Files based on computer technology to complete drafting, design, and design-documentation.

Construction Inspector Project Manager (CIPM) – The individual authorized and accountable for overseeing the Construction and Close Out Phases.

Consultant or Consulting Engineer – An experienced professional firm that provides expert knowledge, study, and design for a fee.

Field Check – The process of verifying feasibility and constructability of project design plans against existing conditions at the project site.

Long-Range Plan – The plan identifying all contemplated projects within the City to meet particular infrastructure needs.

Online System – The web-based service that provides the platform where project information will be accessed, updated, and monitored ([www.projectmanager.com](http://www.projectmanager.com) during this revision of the manual).

Portable Document Format (PDF) – An open standard for document exchange created by Adobe Systems used for representing documents in a manner independent of the application software, hardware, and operating system.

Primary Task – The first level WBS task listed under each project phase.

Professional Liability – Legal obligations arising out of a professional's errors, negligent acts, or omissions, during the course of the practice of his or her craft

Project Brief – The worksheet which provides a project scope description, schematic costs, and yearly time frames for implementation.

Project Charter – The initial document used to define and organize the vision, goals, scope, objectives, constraints, and overall approach for the work to be completed as part of this project.

Project Costs – The total cost of the project including but not limited to all planning/design, utility relocation, right-of-way/easement acquisition, and construction costs.

Project Life Cycle – The entire period of time from the project start to the project completion. The project start is considered the beginning of the initiation phase. Project completion is identified at the end of the warranty period when the Final Project Closeout is approved.

Project Management Plan (PMP) – The document that revises and expands the project charter to clearly identify the roles, responsibilities, and actions that will be undertaken in order to manage the project.

Project Manager – The individual authorized and accountable for managing the project and achieving the project goals and objectives

Project Scope – The work that needs to be accomplished to deliver the final result of the project with the specified conditions, features, and functions.

Project Sponsor – The individual or group responsible for delegating responsibility and authorizing funding for the project (usually the City Council of the City of St. Charles).

Project Stakeholder – Any person or organization that is actively involved in the project, or whose interests may be positively or negatively affected by execution or completion of the project.

Project Team – The full-time and part-time individuals who will work on the project deliverables; all of who will help achieve the project objectives.

Work Breakdown Structure (WBS) – A tool used to define and group by hierarchy a project's discrete work tasks in a way that helps organize and define the total work scope of the project.

### 0.3 THE PROJECT MANAGEMENT INSTITUTE MODEL

The model used as the basis for the Project Management System was originally developed by the Project Management Institute (PMI). The Project Management Institute is internationally recognized and respected for its philosophies and practice of the project management profession. In its book “The Project Management Body of Knowledge (PMBOK),” the Project Management Institute provides an outline that can be followed for any type of project, large or small. This model has been applied to the documentation of infrastructure planning, design and construction procedures described herein.

PMI defines a “Project” as: “A temporary endeavor undertaken to create a unique product or service.” PMI goes on to describe that a project will have a defined beginning and end (usually constrained by dates, funding, or deliverables) and it will be undertaken to meet unique goals and objectives to bring about a perceived beneficial change or product. Infrastructure projects completed by Public Works clearly fall within the PMI description of a project. PMI also defines nine fundamental “knowledge areas” needed for formal project management. These knowledge areas integrate to form the basis of the Project Management System. People, tools, processes, and documents are used to operate the system, but all derive their meaning from the following knowledge areas:

1. Project Integration Management
- 2. Project Scope Management**
- 3. Project Time Management**
- 4. Project Cost Management**
- 5. Project Quality Management**
6. Project Human Resource Management
- 7. Project Communications Management**
- 8. Project Risk Management**
9. Project Procurement Management

Integration management is the integration of all of these knowledge areas throughout a project which is accomplished with the Project Management System and this manual. Therefore, this topic is dealt with throughout the PMM. Human Resource Management is already handled through formal policies and procedures established by City Ordinances and the City’s HR Department. Similarly, procurement management is also formally defined by City ordinances and administered by the City’s Finance Department. Therefore, neither of these two knowledge areas are used within the PMM, but instead the PMM describes the remaining six (highlighted above) in detail.

## 0.4 PROJECT MANAGEMENT SYSTEM TOOLS

### 0.4.1 PROJECT SOFTWARE/SERVER ONLINE SYSTEM

As described earlier, the project management system consists of the entire process and framework established for project management. However, there are a number of tools needed to make the system work efficiently and be usable for staff. The two primary information technology tools used in the City's system are project management software and online project management hosting services. The selected online hosting service provides both of these – the benefit of software operation and a network server environment that interconnects all project information.

The project management software tool consolidates and helps the project manager control information about the project. It is expected to contain the following information:

- The scope of project work
- Tasks to be completed as part of the scope
- Grouping and breakdown of tasks
- Planned and actual timelines for tasks
- Dependencies between tasks
- Assignments of personnel/resources to tasks and responsibilities
- Deliverables and costs
- Issues and risks associated with tasks, deliverables, and resources
- Documents associated with various tasks within the project

By entering project information, the project managers can easily create the documentation needed for various pieces of the project management plan. The project managers can then manipulate the information, monitor or control the progress of the project, and examine the impacts of various changes to the project management plan.

A standalone project management software application provides only limited benefit to the organizational operation of Engineering. The greatest benefit of software is realized when it is combined in a server environment. Similar to the GIS environment, the server environment for a project management application creates a “central repository” where information on all Public Works’ projects is stored. It then becomes possible to analyze and report on information holistically across the entire Department. Some examples include: viewing the workload of all project team members across multiple projects, considering dependent schedules across multiple consultants/contractors, reviewing the impacts of schedule and workload changes from one project affecting multiple projects, and many others.

The server environment provides the flexibility to examine a macro level of multiple tasks, resources, or projects, or to drilldown to a very detailed level within a particular project or group of projects. Additionally, the server environment allows responsibility and accountability for project information to be



“pushed” outside the City’s environment to consultants and contractors hired by the City. To summarize, the project management server environment provides the following additional capabilities:

- Creates a central repository for all project information
- Creates a common technology platform among the entire project team to execute the project management plan
- Collect and manage project information across multiple projects
- Review and manage personnel/resources across multiple projects
- Allows consultants and contractors outside the City’s system to view and update project information based on City controlled permission levels
- Improves communication and accountability within the project team
- Allows elected officials and administration to review varying levels of project information and status based on City controlled permission levels

The online system that combines these two tools (software and server) is to be used by project manager for every project. Each project manager will be provided with a unique username and password in order to access the online system. The system can be accessed through:

[www.projectmanager.com](http://www.projectmanager.com)

At a fundamental level, the system performs the following functions:

- Dashboards
  - PM Home Dashboard – The dashboard provides the PM with a general overview of the tasks assigned to them and other information.
  - All Projects Dashboard
  - Project Dashboard
- Project Planning
- Risks, Issues, Changes
- Reporting
- Document Collection/Sharing
- Collaboration

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#### 0.4.2 PROCEDURAL DOCUMENT MODEL

Within a formal project management system, there are certain documents that are always produced as a management tool for projects. The process of producing these documents identifies the various project management knowledge areas for the entire project team and documents the performance expectations for the team members. As a project moves through the various phases, PMs will manage the project

through the process of completing and refining certain documents for every phase of a project – a Procedural Document Model. PMM Section 9 provide copies of the standard procedural documents and their uses are described in detail throughout the remainder of this manual, but in general, the documents produced will provide the following elements of project management within the knowledge areas:

## 0.5 PROJECT INTEGRATION MANAGEMENT KNOWLEDGE AREAS

### 0.5.1 PROJECT SCOPE MANAGEMENT

- **Scope Planning** - developing a written scope statement as the basis for future project decisions.
- **Scope Definition** - subdividing the major project deliverables into smaller, more manageable components – a Work Breakdown Structure (WBS).
- **Scope Verification** - formalizing acceptance of the project scope.
- **Scope Change Control** - controlling changes to project scope.

### 0.5.2 PROJECT QUALITY MANAGEMENT

- **Quality Planning** - identifying which quality standards are relevant to the project and determining how to satisfy them.
- **Quality Assurance** - evaluating overall project performance on a regular basis to provide confidence that the project will satisfy the relevant quality standards.
- **Quality Control** - monitoring specific project results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory performance.

### 0.5.3 PROJECT TIME MANAGEMENT

- **Activity Definition** - identifying the specific activities that must be performed to produce the various project deliverables.
- **Activity Sequencing** - identifying and documenting interactivity dependencies.
- **Activity Duration Estimating** - estimating the number of work periods which will be needed to complete individual activities.
- **Schedule Development** - analyzing activity sequences, activity durations, and resource requirements to create the project schedule.
- **Schedule Control** - controlling changes to the project schedule.

### 0.5.4 PROJECT COST MANAGEMENT

- **Resource Planning** - determining what resources (people, equipment, materials) and what quantities of each should be used to perform project activities.

- **Cost Estimating** - developing an approximation (estimate) of the costs of the resources needed to complete all project activities.
- **Cost Budgeting** - allocating the overall cost estimate to individual work items.
- **Cost Control** - controlling changes to the project budget.

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#### 0.5.5 PROJECT RISK MANAGEMENT

- **Risk Identification** - determining which risks are likely to affect the project and documenting the characteristics of each.
- **Risk Quantification** - evaluating risks and risk interactions to assess the range of possible project outcomes.
- **Risk Response Development** - defining enhancement steps for opportunities and responses to threats.
- **Risk Response Control** - responding to changes in risk over the course of the project.

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#### 0.5.6 PROJECT COMMUNICATIONS MANAGEMENT

- **Communications Planning** - determining the information and communications needs of the stakeholders: who needs what information, when will they need it, and how will it be given.
- **Information Distribution** - making needed information available to project stakeholders in a timely manner.
- **Performance Reporting** - collecting and disseminating performance information. This includes status reporting, progress measurement

### 0.6 DESCRIPTION OF A PUBLIC WORKS PROJECT

Nearly every Public Works' project occurs in phases. Though projects can be generated from a number of sources – CIP, Council, Committees, identified Public Works needs, etc., all projects will generally move through the same phases. Public Works projects are initiated with specific goals or objectives typically related to the improvement of infrastructure or planning improvements to infrastructure. When the goals and objectives of a project are identified and Council allocates funding for a particular project, the process of analysis and design begins. Some projects may never progress beyond this stage because they are intended only to provide information (in the form of a study), but in most cases, as design progresses, coordination with adjacent utilities is necessary. Nearly every project needs certain space or use of land in which it is to occur. Procuring the rights to use this space is commonly known as the acquisition of “right-of-way”. Once those rights are secured, an infrastructure project can then be constructed. Finally, once construction is completed, the infrastructure improvements must be finalized and accepted by the City. This is the process of formally closing-out an infrastructure project.

Project progression may or may not occur exactly as described above, but it is useful for identifying the general phases of most infrastructure projects. For the purposes of the PMM, Public Works projects are based on the following standard project phases:

1. Initiation – The evolution from a project idea to becoming part of a long-range plan to receiving project sponsorship and associated funding.
2. Planning – The selection of the project team and outlining of the scope, schedule, budget, and standards for the project.
3. Design – The completion of formal engineering analyses and design to complete needed studies or create construction drawings.
4. Right-of-Way Acquisition – The process of acquiring property ownership, rights, or interests needed for the project.
5. Utility Coordination – The process of coordinating the engineering design with utility agencies for the adjustment, relocation, or supply of utility facilities.
6. Construction – The execution of the physical work needed to construct the project.
7. Closeout – The completion of all final construction items and final documentation to bring the project to a close.

In addition, there are variable project phases with unique tasks that will overlap the above project phases, but may or may not be needed for every project. These variable project phases are:

8. Permitting – Obtaining needed permits, approvals, or clearances from regulatory agencies.
9. Public Engagement – Communicating project information to the public and project stakeholders.
10. Outside Funding – Administration of grant, loan, or other funding from non-City sources.

The project management procedures and primary tasks associated with each project phase are described throughout the remainder of this manual.

## 1 INITIATION PHASE

### 1.1 INITIATION PHASE PRIMARY TASKS

#### 1.1.1 LONG-RANGE PLANNING

Every Public Works project first begins as an idea. The idea is usually generated in response to a need or problem as a means of addressing it. There may be considerable more effort needed to fully communicate, evaluate, and adopt an idea as a project, but the idea becomes a placeholder. The process the Public Works Dept. uses to catalog ideas is typically one of long-range planning. Most projects will be generated as a result of a long-range plan that previously identified the project (or “idea”). The first task of the initiation phase is to incorporate a project into a long-range plan.

The development of a long-range plan may be a project unto itself. For example, in 2009-2010, the Public Works Dept. completed a Comprehensive Water System Study to evaluate the long-term needs of the potable water storage and distribution system. The study resulted in a number of future recommended improvements and effectively becomes the long-range planning tool for the water system. Though it is not the only way, a project is typically initiated because it has been identified in a long-range plan. The long-range plan is the first source for a PM when initiating a project.

The purpose of long-range planning is to consider the needs of a particular infrastructure system across a very long timeline, establish future projects to address those needs, prioritize the importance of those projects relative to one another, and ultimately determine the budgetary needs to support the infrastructure of the City. Once a long-range plan is available, City staff, administration, and elected officials have a tool on which to base decisions to fund projects. Generally, the long-range plans managed by the Public Works Dept. and the individuals responsible for them are as follows:

Plan	Managers	Approval*
<b>Enterprise Asset Management System</b>	City Engineer and Assistant Director of Public Works (ADPW)	Director of Public Works (DPW)
<b>Long-Range Transportation Plan</b>	Design Sr. PM → City Engineer → DPW	Street Committee
<b>Pavement Management Plan</b>		
<b>Bridge and Culvert Management Plan</b>		
<b>ADA and Sidewalk Transition Plan</b>		
<b>Retaining Wall Management Plan</b>		
<b>High Accident Location Mitigation Plan</b>	Traffic Sr. PM → City Engineer → DPW	Street Committee
<b>Traffic Management Plan</b>		
<b>Lighting System Plan</b>		
<b>Water System Master Plan</b>	Water Systems Manager → ADPW → DPW <ul style="list-style-type: none"> <li>City Engineer (Eng. Support)</li> </ul>	Board of Public Works
<b>Sanitary Collection systems' Management, Operation, and Maintenance (CMOM) Program</b>	Assistant Director of Public Works → DPW <ul style="list-style-type: none"> <li>City Engineer (Eng. Support)</li> </ul>	Board of Public Works
<b>Storm Water Master Plan</b>	Design Sr. PM → City Engineer → DPW	Board of Public Works

\*The City Council has all final approvals on long-range planning, but these can be considered the managing approvals

### 1.1.2 EVALUATION

The next step in project initiation is the evaluation of the project in comparison with other projects. Capital needs for projects nearly always outweigh the capital resources available for projects. Therefore, it becomes necessary to evaluate the projects within the long-range plans. The evaluation task is typically the result of discussions among project sponsors, but it is often the Public Work Department's role to

facilitate those discussions and provide information as necessary. Project sponsorship for the Public Works Dept. takes the form of the Mayor and City Council who allocate the necessary funding for various projects.

Whether or not generated from a Long-Range Plan, the Design Sr. PM will assign a PM to evaluate CIP projects. The PM is typically asked to provide technical information on the budget and feasibility of identified projects based on their knowledge and experience with similar projects. This phase may initiate a project study phase which the Public Works Dept. must then scope and manage as a standard project. This process is described in the next section.

Projects sponsors may also desire the input of stakeholders in the evaluation process as well. Stakeholders may include adjacent property owners in the project area, other City Departments, business associations (such as the Chamber of Commerce, South Main Preservation Society, etc.), and many others. It is often the PM's task to manage some form of stakeholder input. Stakeholder input can take a variety of forms which include:

- Comment letters
- Website feedback
- Meetings
- Phone calls
- Open house meetings
- Regular City government meetings

The PM should be prepared to manage and collect stakeholder input in a variety of ways during the initiation phase.

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### 1.1.3 PROJECT STUDIES

It is often necessary to perform a detailed engineering study of a project area (or a series of projects) to provide additional information to project sponsors or as a means of determining an appropriate project scope and budget. In these cases, the PM should perform the study as a standalone project and proceed with the project management process accordingly. This will mean the preparation of a Project Brief for the study, allocating funding within the CIP, completion of a Project Charter, and on through the remaining project phases. Alternatively, project studies may be the outcome of issues or risks that develop at any phase during the design process. Therefore, it is important for the PM to realize that the process of project studies can be one of iteration throughout the phases of the project life-cycle and not always sequential. When the study is complete, results shall be returned to the project sponsors and/or stakeholders that initiated the study.

Minor studies may only require limited effort and can possibly be performed in-house. These minor studies need not follow the complete project management process. However, the PM may wish to use elements of the process to establish deadlines, expectations, and accountability among the study team

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### 1.1.4 SCOPE DEVELOPMENT

The next task in project initiation consists of developing the basic scope of a project. Based on the results of long-range planning, project studies, and needs assessment, a schematic project scope can be developed and introduced into the CIP. The schematic scope takes on the form of a Project Brief. These are the basic CIP entry sheets which provide a project scope description, schematic costs, and yearly

time frames for implementation. The standard project brief includes example text and is provided in PMM Standard 9.1 PROJECT BRIEF, but minimum requirements for a project brief include:

- a. Project title
- b. Project limits
- c. High level description of the scope to be completed
- d. A description of the problem or need the project is proposed to address
- e. A justification as to how the project will address the problem or need
- f. Any critical elements associated with the project
- g. Schematic costs for all scope items (i.e. design, right-of-way, utilities, construction)
- h. A schematic schedule in terms of costs per year

The PM will create a new project folder in the appropriate infrastructure type (Street, Storm, etc.) for each project to be proposed in the CIP (i.e. *S:\BUDGET\CIP\2015 (CIP yrs 2016-2021)\STORM\Project Name*). New projects can be created and evaluated throughout the year once identified and not only when the CIP process begins. The PM will have a GIS map of the proposed project created in order to assess the limits and schematic quantities of the project. The PM will also be expected to research past projects, bid tabs, and other existing project information, including study results, in the project area to better define scope and costs. The Design Sr. PM and PM will then perform a field investigation at the project site to identify potential impacts or issues. Once these steps are complete, the PM will complete a conceptual Cost Estimate using PMM Standard 9.11 Cost Estimate. Line items on the cost estimate can be added or deleted as necessary. Projects that were included in previous years' CIPs must be evaluated and updated with each CIP submittal. The PM will copy the prior years' electronic folder into the current CIP folder under preparation in order to review and adjust documents as necessary. Once completed, the Design Sr. PM shall submit each infrastructure type's proposed CIP to the City Engineer for review and approval.

It's possible that the PM may be asked to generate a Project Charter during the initiation phase as a means of providing more detail about the project. If this is the case, the PM can refer to PMM Section 2.1.1 PROJECT CHARTER for more detail about this process.

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### 1.1.5 CIP PROCESS

The Capital Improvement Program (CIP) is the ongoing budgetary process by the City to identify and assign capital funds to projects. The designation of project funds in the CIP typically follows the annual process with staff CIP submittals to Administration for review in Quarter 1 of the year, Administration review and proposal through Quarter 2 of the year, and finally Council review and approval during Quarters 3 and/or 4 of the year.

The project briefs are submitted as part of the annual CIP process and then move through the review and approval process from the Finance Dept. to the Mayor to City Council. Every project manager must be aware that project priorities within a CIP are always evolving. Projects may be accelerated or postponed throughout this process. The Project Manager must recognize that Engineering Division's role during this

process is to provide accurate, yet conservative estimates of need, scope, budget, schedule, and risks so that elected officials have the best possible information on which to base their decisions.

It is also important to note that funds may be allocated for a standing CIP project or a new project at any time during the CIP year due to an urgent need or initiative that arises within the City. Once capital funds are allocated for a project, that project, in effect, becomes part of the CIP (because it becomes part of the CIP budget) regardless of whether it was included in a previous annual CIP proposal or not. As a result, it must follow the project management process once funding has been allocated for the project and moves directly to the planning phase.

## 1.2 INITIATION PHASE MANAGEMENT

### 1.2.1 SCOPE MANAGEMENT

Tasks	Procedures	End Products
Long-Range Planning	The long-range plan provides the first opportunity to scope the project, but it will change multiple times before it becomes a project	Long-Range Plans Regular updates to long-range plans
Evaluation	Seek stakeholder input Consider phasing of long-range planning projects and adjust the long-range plan accordingly	Scoring/Ranking of long-range plan projects Stakeholder input summary (if applicable)
Project Studies	Use project studies to determine appropriate project scopes whether completed in-house or by consultants	Completed project study with professional recommendations
Scope Development	The project brief should be able to explain a high-level scope of the project that ties back to the long-range plan	Project Brief
CIP Process	Move projects into the planning phase once funding has been allocated regardless of if the project was part of a previous CIP proposal	Adopted Annual CIP CIP Budget

### 1.2.2 QUALITY MANAGEMENT

Tasks	Procedures	End Products
Long-Range Planning	Supporting data should be used and provided in the long-range planning	Long-Range Plans Regular updates to long-range plans
Evaluation	Seek stakeholder input Include potential regulatory (permit) agencies feedback as stakeholder	Stakeholder input summary (if applicable)



	input if possible	
<b>Project Studies</b>	Complete project studies if time and budget allows (complete in-house to save costs)	Completed project study with professional recommendations
<b>Scope Development</b>	List any necessary quality requirements (standards, regulatory compliance, permits, etc.) in project brief	Project Brief with quality considerations
<b>CIP Process</b>	Move projects into the planning phase once funding has been allocated regardless of if the project was part of a previous CIP proposal	Adopted Annual CIP CIP Budget

### 1.2.3 TIME MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Products</b>
<b>Long-Range Planning</b>	Schedule regular reviews of the long-range plan and allow enough time in consideration of other project efforts that are on-going	Long-Range Plans Regular updates to long-range plans
<b>Evaluation</b>	Set schedule for stakeholder input process	Stakeholder input schedule
<b>Project Studies</b>	Once a project study is initiated use the project management system for it as a stand-alone project	Completed project study managed using the planning and design phase of the PMM
<b>Scope Development</b>	Assign yearly time-frames for phase completion in the project brief  A Project Charter or schematic schedule may be available to use	Project Brief with schedule in terms of costs per year
<b>CIP Process</b>	Assign CIP years according to an estimation of the time it will take to phase, plan, and design the project  Move projects into the planning phase once funding has been allocated regardless of if the project was part of a previous CIP proposal	Adopted Annual CIP

### 1.2.4 COST MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Products</b>
<b>Long-Range Planning</b>	Long-range planning costs should be listed as "TBD" unless some manner of project study has been completed	Long-Range Plans Regular updates to long-range plans

	Update long-range plan costs during each regular review	
<b>Evaluation</b>	Stakeholders may request cost estimates for various options which can be completed as part of a project study	Stakeholder input summary
<b>Project Studies</b>	Studies should always provide cost estimates and cost/benefit analyses as deliverables	Completed project study with cost/benefit analyses
<b>Scope Development</b>	<p>Use <u>PMM Standard 9.11 COST ESTIMATE</u> to consider as many variables as possible</p> <p>Assign appropriate contingencies rather than exclusions or assumptions – exclusions, assumptions, or risks should be listed, but are not beneficial for budgeting without a value</p> <p>CIP budgets can be adjusted during the CIP process if exclusions, assumptions, or risks are deemed acceptable without assigning a value</p> <p>Check any outside funding obligations</p>	<p>Cost estimate @ 35% contingency</p> <p>Project Brief with schedule in terms of costs per year</p>
<b>CIP Process</b>	Use professionally prepared and accurate cost estimates for CIP	Adopted Annual CIP

### 1.2.5 RISK MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Products</b>
<b>Long-Range Planning</b>	Long-range planning should include known risks	<p>Long-Range Plans</p> <p>Regular updates to long-range plans</p>
<b>Evaluation</b>	<p>Consider stakeholder input (especially opposition to certain projects)</p> <p>Have stakeholders prioritize projects</p>	Stakeholder input summary
<b>Project Studies</b>	Project studies should analyze and describe contingency plans	Completed project study
<b>Scope Development</b>	<p>Describe any critical project exclusions, assumptions, issues, or risks in project brief</p> <p>Check any outside funding obligations</p> <p>Check any regulatory compliance</p>	Project Brief which describes exclusions, assumptions, issues, or risks

	requirements	
<b>CIP Process</b>	Provide accurate, yet conservative estimates of need, scope, budget, schedule, and risks	Adopted Annual CIP

## 1.2.6 COMMUNICATIONS MANAGEMENT

The Project Initiation Phase is primarily one entirely of communication. During the initiation phase, there is considerable emphasis on the sharing of information with project stakeholders and sponsors. Therefore, detailed communications management is not described here since it is imbedded throughout the Project Initiation Phase. However, important considerations to manage communication during this phase are as follows:

- A schedule should be developed for regular reviews of long-range plans through the appropriate communication lines.
- The process of collecting and receiving stakeholder input should be well planned as follows:
  1. Need – Identify the level of need for stakeholder input – is it just internal City Commissions, Boards, Committees, Council, etc. or should it include other public groups?
  2. People – Identify the individuals who will be considered stakeholders and invited to offer feedback
  3. Information – Identify the information that will need to be communicated for stakeholders
  4. Format – Identify how information will be communicated (e.g., presentations, mailings, etc.)
  5. Notice – Identify how notice will be given to stakeholders (i.e., how the word will be spread)
  6. Event – Identify the events or occasions that will be planned/held to receive stakeholder input
  7. Feedback – Identify how stakeholder feedback will be received and collected
  8. Summary – Identify who will be responsible for summarizing stakeholder input and how they are to summarize it
  9. Sharing – Identify who will receive stakeholder input summaries and how they will receive it
- The CIP process is the most important means to communicate the project brief to project stakeholders and project sponsors (City Council).

## 2 PLANNING PHASE

### 2.1 PLANNING PHASE PRIMARY TASKS

#### 2.1.1 PROJECT CHARTER

A Project Charter must be developed at the beginning of the planning phase. Typically, once funds have been allocated for a project in the CIP, the Project Charter will be developed. However, Public Works administrative staff may determine that a Project Charter should be developed in anticipation of project funding and direct the PM to do so prior to final funding approval within the budget. The purpose of the Project Charter is to define the vision, goals, scope, objectives, constraints, and overall approach for the work to be completed as part of the project. Through completing the Project Charter document, the PM creates the handbook to be followed throughout the life of a specific project.

---

#### 2.1.1.1 THE PROJECT CHARTER DOCUMENT

The Public Works standard Project Charter document is located in the network folder:

S:\STANDARDS\PROJECT MANAGEMENT

It will also be available in the “STANDARDS” folder of the online system described further below.

In general, the project charter is organized around the following project areas:

1. Project Purpose (relates to Scope Management)
2. Project Team (relates to Quality and Communications Management)
3. Project Scope (relates to Scope, Cost, and Time Management)
4. Project Conditions (relates to Scope, Risk, and Communication Management)
5. Project Standards (relates to Quality Management)

It should be noted that additional sections are included within the Project Charter document that begin with “PMP”, which stands for “Project Management Plan”. As a project progresses through the planning phase into the design phase, the Project Charter document will evolve into the Project Management Plan (PMP). These sections will be added to complete the formal Project Management Plan once the design phase has begun.

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#### 2.1.1.2 PROJECT PURPOSE

The project purpose statement should be a few paragraphs summarizing the project and serves as the executive summary of the Project Charter. It should cover the problem or need the project is addressing and describe the justification of funding for the project. The purpose statement should include a brief overview of the project – its location, its limits, its scope, its costs, etc. Most of this information can be gleaned from the Project Brief previously developed for the CIP. Finally, the purpose statement should include any relevant imbedded details about the project that would be important for a casual reviewer of the document to know.

---

#### 2.1.1.3 PROJECT TEAM

The project team section of the Charter documents each team member’s identity, role, and contact information. During the initial development of the Charter, it will likely be undetermined whether the project will use a consultant or contractor if the project may be designed or constructed with City forces. In these cases, the PM will use this opportunity to establish that a consultant/contractor will be used and simply assign “To Be Determined” (TBD) to certain roles at this stage of the project. However, it is also

important for the PM to identify any outside agents who may have a role in completion of the project if it is a partnership (such as with another City or the County).

---

#### 2.1.1.4 PROJECT SCOPE

The project scope items begin with goals and objectives for the project and then assignment of the responsibilities for accomplishment. The PM need not lose sleep over the difference between a goal and objective. The important thing is to get them documented whether or not they are in precisely the right category. By developing goals and objectives, the PM is recording an understanding of what the project should accomplish that can then be communicated with other project team members. Very broadly, goals can be abstract and objectives concrete. For example:

Goal: Improve storm water flow on 5<sup>th</sup> Street

Objective 1: Develop improvement plans for a curb and gutter and storm water collection system along 5<sup>th</sup> Street.

Objective 2: Keep all improvements within five (5) feet of existing right-of-way.

Once goals and objectives have been assigned, the PM shall describe broad statements of work (SOW). These should be the high-level tasks of the project. The PM then assigns the owner or agent responsible for each SOW and then documents a due date for the work and/or a sequence of it. Again, because a consultant will typically not have been selected at this stage, these items may still be relatively broad.

During documentation of the SOWs, there will be certain definitive events that are anticipated. These events should be considered major milestones that mark some manner of completion of project work. Most times, but not always, these milestones will have a deliverable associated with them. The PM is to document these milestones and associate deliverables as applicable. For example, “Street Committee Report” could be identified as a major milestone in the project and it will likely have an associated deliverable of the same title.

The next section of the Charter will identify items considered beyond the scope of the project. The PM should be cautious not to exclude any item too early and limit possible input from consultants. However, there may be certain work the PM will want to clearly identify as unnecessary to or outside of the scope. For example, the PM may wish to exclude any survey work from the project because it has already been completed under another contract and will be made available to the project team.

The project scope section concludes with the PM’s estimated cost and duration associated with each deliverable. These will likely be the PM’s best educated guess based on similar past projects and engineering judgment. Nevertheless, this identifies scope expectations and creates a baseline for the project cost and schedule. Depending on the stage and prior detailed analysis of the project, the PM may not wish to detail each deliverable.

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#### 2.1.1.5 PROJECT CONDITIONS

The project conditions area provides a summary of items that must be resolved or addressed during the life of the project. They are organized as: Issues, Risks, and Stakeholder Input. These items will change throughout the life of the project as some are resolved and removed and new ones are discovered and added. The method of managing these changes in issues and risks is addressed through the PMP and

the online system. This section of the Project Charter is provided to record everything known about the project during the planning phase.

The PM should not spend considerable effort determining if an item should be considered an issue or a risk since it is most important to log, rate, and assign responsibility for either. However, it is certainly possible that an issue could develop into a risk. In general, issues and risks can be distinguished as follows:

**Issue:** The item requires follow-up or should be addressed during the project, but its occurrence does not pose a threat to the project scope, quality, budget, or schedule.

**Risk:** The occurrence of the item poses a threat to the project scope, quality, budget, or schedule, and must be addressed by the project team.

**Example:** “The Ward Councilmember would like the Project Manager to walk the site with them and look at the resident’s yard at 119 Cherry Street who is experiencing erosion they believe is caused by the street.” There is no imminent threat to scope, schedule, budget, or quality, but the issue needs to be addressed. However, if the site visit determines that the erosion was being caused by street drainage and a new storm sewer was needed for the project which would require redesign and an increase the cost estimate, now both the schedule and budget are threatened which constitutes a risk.

The final Project Conditions section addresses stakeholder input. It is highly likely that a project became a project because of stakeholder interests in it. Therefore, it is important for the PM to understand those interests and be able to communicate them to the rest of the project team. If a stakeholder meeting (or a series of meetings) has taken place during the initiation phase of the project, those meeting results should be summarized and recorded in this section of the Project Charter. Even if no formal meetings have been held, Public Works Management Staff as well as the PM may have a working knowledge of certain groups’ interests in the project that could be included (the PM may note that obtaining additional knowledge of stakeholder interest could be listed as a project issue to be addressed). For example, City Officials could be working on a large redevelopment effort with a large property owner and developer and need the project completed in conjunction with the redevelopment. As a result, the developer and property owner representatives could have certain interests in the outcome of the project scope, schedule, or budget that should be recorded.

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#### 2.1.1.6 PROJECT STANDARDS

The final section of the Project Charter is provided to record the standards on which the project will be based. The PM should work with all members of the project team to identify appropriate standards based on the project type. This effort will set the expectations for the technical components of the project. It may be that certain standards cannot be determined until further investigation or project design is completed. In these cases, the PM can record some areas as “TBD” and include an issue or risk that identifies those standards to be determined later.

The Project Standards for Public Works projects are divided into three subsections:

**Standards** – This section will typically record engineering design standards and construction specifications that need to be met. Common standards based on the project type could include:

6. Roadways – St. Louis County Highway Design Criteria, AASHTO Policy on Geometric Design, MoDOT EPG or LPA Manual, etc.

7. Storm Water – MSD Plan Preparation Guidelines, MSD Standard Construction Specifications, Army Corps of Engineers
8. Sanitary – Ten States Standards, MDNR Wastewater Design Criteria, MSD Pump Station Design Requirements, etc.
9. Water – Ten States Standards, AWWA Manuals of Water Supply Practices, etc.

Permits/Outside Approvals – This section is intended to record any additional permitting or approvals that may be needed for the project. If the project impacts an environmentally sensitive area, additional federal or state permits may be needed from the Army Corps of Engineers and/or MDNR. If the project is funded with Federal, State, or County grant funding, additional approvals will be needed from the agencies administering the funds. In addition, approvals may be needed from other City Departments such as building or flood plain permits from Community Development. Common permits and approvals are included in PMM Section 8.1 PERMITTING, but there could be several others depending on the nature of the project. The PM should carefully research and record any possible permits that may be needed.

Note – This section is provided as a record of any other special project standards or considerations that should be included. The project may be limited by legal or property rights that would not allow it to encroach beyond City owned right-of-ways. The project may need to be completed by a certain date because of City obligations to another party. Whatever the case, the PM should use this section to catalog additional standards of care that must be used during the project planning, design, and construction.

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#### 2.1.1.7 PROJECT APPROVALS

The final section of the Project Charter is provided for all team members to acknowledge their review and agreement with the Project Charter. This is necessary so the PM can have confidence in the team members understanding of the project and the Public Works administrative staffs' support of the project. If the PM feels it is necessary or beneficial (or if otherwise directed by their supervisors), the Project Charter should be introduced to appropriate project stakeholders which could include a Council Subcommittee; Task Force; and/or Review Board (such as the Board of Public Works) in order to gain consensus and buy-in on the planned scope of the project.

---

#### 2.1.1.8 ONLINE PROJECT SET-UP

As described earlier, the PM may be directed at any point during the initiation phase to develop a schematic WBS and schedule to enter in the online system in order to track progress. However, if it has not been completed before this time, the project must be entered into the online system once the Project Charter is complete. This is done prior to hiring a consultant so the PM may monitor progress and be able to communicate anticipated completion dates. The process of entry into the online system is as follows:

The Design Sr. PM completes steps 1 through 4 below.

1. Select the "New" tab or select "New" from the "Menu" button
2. Enter the project name and relevant information (budget and rate can be ignored)

3. Select the users to access this project (Note: the consultant will need to be added later if the project is to be a consultant designed project)

The screenshot shows a web browser window titled "Project Manager - Windows Internet Explorer" with the URL <https://secure.projectmanager.com/default.aspx?id=new1&section=New>. The page header includes "City of St. Charles" and navigation tabs for "My Home", "All", "Elm Street...", and "New". A left sidebar contains a "MENU" button and three options: "Create a new project", "Create a new project group", and "Open an existing project". The main content area is titled "Fill in the following details to create your new project" and contains the following fields:

- Project Name: [Text input]
- Description: [Text input]
- Start Date: 1/22/2011 [Calendar icon]
- End Date: 7/29/2011 [Calendar icon]
- Budget: [Text input]
- Default Rate: [Text input] per hour

An "OK" button is located below the form fields. To the right of the form is a "User Access" section with a list of users and checkboxes:

- ☒ Brick
- ☒ Debra
- ☒ Ellison
- ☒ Eric
- ☒ John
- ☒ Kevin

Four numbered arrows indicate the following steps:

- Arrow 1 points to the "New" tab in the top navigation bar.
- Arrow 2 points to the "OK" button at the bottom of the form.
- Arrow 3 points to the "User Access" section on the right.
- Arrow 4 points to the "Create a new project" option in the left sidebar.

4. Once the new project is created, select "Copy an existing project's tasks" and select the "CIP-NEW" Template or "CIP-NEW – Outside Funding" Template. (Note: the PM may choose another project if they feel it is more similar, but they should be careful to check that all relevant tasks are included).



Project Manager - Windows Internet Explorer

https://secure.projectmanager.com/default.aspx?id=334059&section=TaskSetup

File Edit View Favorites Tools Help

★ Favorites | ★ Suggested Sites | Free Hotmail | Web Slice Gallery

Project Manager

### City of St. Charles

My Home All Elm Street... Test 1 New

**MENU**

Dashboard Tasks Discuss Timesheet Expenses Risks Issues Changes Info

GO GO GO GO GO GO GO GO

☐ Create a blank task list

☒ Copy an existing project's tasks

☐ Import a Project plan

**All projects**

Name	Description
CIP - New Project	New Project Format for all CIP projects
Cole Creek Stabilization - Droste to Ruth	Stormwater - Bank Stabilization in Cole Creek from Droste to Ruth
Elm Street Widening	Final Design, ROW, and widening of Elm Street between Elm Pl. Industrial and MD
Sample	This is a sample software project. It show how a new software package was
Test 2	Test 2

OK

The PM completes steps 5 through 18 below.

5. Adjust or add tasks for reasonable duration
6. Modify relevant tasks to be milestones according to the Project Charter.
7. Make certain all primary tasks described in the PMM remain. Detailed tasks should be entered as subtasks to each of the primary tasks using the indent method.
8. Assign all relevant resources to each task which may include City personnel, consultant, and any outside agent, such as a utility company (if applicable).
9. Link tasks based on finish to start (all tasks should be linked at some level).

The screenshot shows the Project Manager web application interface. The browser address bar displays the URL: <https://secure.projectmanager.com/default.aspx?id=334059&section=Tasks>. The interface includes a navigation menu with options like Dashboard, Tasks, Discuss, Timesheet, Expenses, Risks, Issues, Changes, and Info. Below the menu is a toolbar with various icons for task management, including 'Add Task', 'Milestone', 'Indent', 'Outdent', 'Resource', 'Link', 'Unlink', 'Color', 'Filter', 'Show Actual', 'Show Baseline', 'Hide Columns', and 'Show Task Info'. A table of tasks is displayed at the bottom, with columns for Task Name, Planned Start Date, Planned Finish Date, Planned Duration, Planned Effort, and Resource. Arrows numbered 5 through 9 point to specific elements: Arrow 5 points to the 'Planned Duration' column; Arrow 6 points to the 'Milestone' icon; Arrow 7 points to the 'Add Task' icon; Arrow 8 points to the 'Resource' icon; and Arrow 9 points to the 'Link' icon.

	Task Name	Planned Start Date	Planned Finish Date	Planned Duration	Planned Effort	Resource
1	Initiation Phase	11/1/2011	1/2/2012	226 days		
3	Planning Phase	12/13/2011	4/12/2012	88 days		
5	Design Phase	4/13/2012	12/18/2014	700 days		
7	Utility Coordination	4/13/2012	2/12/2015	740 days		
9	Right-of-Way Acquisition	12/19/2014	7/13/2017	670 days		
11	Construction	7/14/2017	11/29/2018	360 days		
13	Permitting	4/13/2012	3/3/2014	492 days		
15	Community Relations	4/13/2012	2/6/2017	1257 days		
17	Outside Funding	4/13/2012	1/17/2019	1765 days		

10. In order to add resources within the online system, look for “Resources” under the “All” projects tab.
11. Associate a resource with a user login to allow that resource access to the system (Note: new logins can be created by requesting an Administrator, usually the Design Sr. PM, to create them).

The screenshot shows the Project Manager web application interface. The browser window title is "Project Manager - Windows Internet Explorer". The address bar shows the URL: <https://secure.projectmanager.com/default.aspx?id=3216658section=Resources>. The page has a navigation bar with tabs: "My Home", "All", "Test 1", and "New". Below the navigation bar is a menu with icons for "Dashboard", "Projects", "Resources", "Workload", "Reports", and "Documents". The "Resources" tab is selected, and an arrow labeled "10" points to it. Below the menu is a table of resources. The table has columns: "Full Name", "Short Name", "Active", and "Actions". The resources listed are: Bax Engineering, Brian Faust, Brick, Debra, Dinan, Ellison, Jennifer Jones, John, Mike Smith, Rick Lewis, and Sam Watson. An arrow labeled "10" points to the "Resources" tab in the menu. To the right of the table is an "Edit Resource" form. The form has fields for "Resource Name", "Short name", "User login", and "Default Hourly Rate". The "User login" field is set to "Select", and an arrow labeled "11" points to it. Below the form is a table of "Allocated Projects" with columns "Project Name" and "Due date". The project listed is "Elm Street Widening" with a due date of "8/31/2012".

Project Manager - Windows Internet Explorer

https://secure.projectmanager.com/default.aspx?id=3216658section=Resources

File Edit View Favorites Tools Help

PM Project Manager

City of St. C

My Home All Test 1 New

Dashboard Projects Resources Workload Reports Documents

GO GO GO GO GO GO

Add Resource

View resources by project: All projects

Full Name	Short Name	Active	Actions
<a href="#">Bax Engineering</a>	Bax Eng	Active	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Brian Faust</a>	Brian F	Active	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Brick</a>	B	Active	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Debra</a>	D	Active	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Dinan</a>	Dinan	Active	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Ellison</a>	E	Active	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Jennifer Jones</a>	Jen	Active	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">John</a>	J	Active	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Mike Smith</a>	Mike	Active	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Rick Lewis</a>	Rick Le	Active	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Sam Watson</a>	Sam	Active	<a href="#">Edit</a> <a href="#">Delete</a>

Edit Resource

Active Inactive

Resource Name:

Short name:

User login:

Default Hourly Rate:

[Hide Allocated](#) [Save](#)

Allocated Projects

Project Name	Due date
<a href="#">Elm Street Widening</a>	8/31/2012

12. Add any risks to the online system from the Project Charter

13. Add any issues to the online system from the Project Charter

The image displays two side-by-side screenshots of the 'Project Manager' web application, both running in a 'Windows Internet Explorer' browser window. The browser's address bar shows the URL 'https://secure.projectmanager.com/default.aspx?id=334059&section=Risks' for the left screenshot and 'https://secure.projectmanager.com/default.aspx?id=334059&section=Issues' for the right screenshot.

Both screenshots show the 'City of St. Charles' header and a navigation menu with options: 'My Home', 'All', 'Elm Street...', 'Test 1', and 'New'. Below the menu is a row of icons for 'Dashboard', 'Tasks', 'Discuss', 'Timesheet', 'Expenses', 'Risks', and 'Issues'. In the left screenshot, the 'Risks' icon is highlighted with a white arrow labeled '12'. In the right screenshot, the 'Issues' icon is highlighted with a white arrow labeled '13'.

The left screenshot shows the 'Add a New Risk' form. It includes fields for 'Risk Name', 'Description', 'Raised By', 'Date Raised' (1/29/2011), and 'Date Due' (2/5/2011). There are radio buttons for 'Impact' (Low, Medium, High) and 'Likelihood' (Low, Medium, High). A 'Level' dropdown is set to '(Medium)'. An 'Assigned To' dropdown is set to 'Select'. The 'Status' is set to 'Open' (radio button selected). A green 'Save' button is at the bottom right.

The right screenshot shows the 'Add a New Issue' form. It includes fields for 'Issue Name', 'Description', 'Raised By', 'Date Raised' (1/29/2011), and 'Date Due' (2/5/2011). There are radio buttons for 'Impact' (Low, Medium, High) and 'Priority' (Low, Medium, High). A 'Level' dropdown is set to '(Medium)'. An 'Assigned To' dropdown is set to 'Select'. The 'Status' is set to 'Open' (radio button selected). A green 'Save' button is at the bottom right.

14. Issues and risks can be linked to tasks by right-clicking on top of a particular task in the project tab

Project Manager - Windows Internet Explorer

PM https://secure.projectmanager.com/default.aspx?id=334059&section=Tasks

File Edit View Favorites Tools Help

★ Favorites ★ Suggested Sites Free Hotmail Web Slice Gallery

PM Project Manager

### City of St. Charles

My Home All Elm Street... Test 1 New

Dashboard Tasks Discuss Timesheet Expenses Risks Issues Changes Info

GO GO GO GO GO GO GO GO

Save Import Print Export Columns Add Task Cut Copy Delete Paste Indent Outdent Add Note Link Unlink Hide Planned Show Actual Show Baseline Hide Columns Hide Gantt Show Task Info

All	Task Name	Planned Finish Date	Planned Duration	Planned Effort	Resource
1	Initiation Phase	2/2011	226 days		
3	Planning Phase	/2012	88 days		
5	Design Phase	8/2014	700 days		
7	Utility Coordination	/2015	740 days		
9	Right-of-Way Acquisition	/2017	670 days		
11	Construction	9/2018	360 days		
13	Permitting	2014	492 days		
15	Community Relations	2017	1257 days		
17	Outside Funding	/2019	1765 days		
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					

14 Rt. Clk

- Add Task
- Cut
- Copy
- Paste
- Delete
- Milestone
- Color
- Add Note
- Lock Task
- Indent
- Outdent
- Link Task
- Link Risk
- Link Issue
- Link Change
- Show Timescale



15. Use the documents area to share project data. Right-click on the folder to add, delete, or modify folders.

Project Manager - Windows Internet Explorer

https://secure.projectmanager.com/default.aspx?id=321665&section=Documents

File Edit View Favorites Tools Help

Project Manager

City of St. Charles

My Home All Elm Street... Test 1 Clients Alerts New

Dashboard Projects Resources Workload Reports Documents

GO GO GO GO GO

NAVIGATE SEARCH VIEWS FILES & FOLDERS

Back Forward Up Find Details Add Add File Delete

Folders Buy more storage

Storage Usage 0%

BUDGET STANDARDS

Projects

CP - New Project

Cole Creek Stabilization - Droste to Ruth

Elm Street Widening

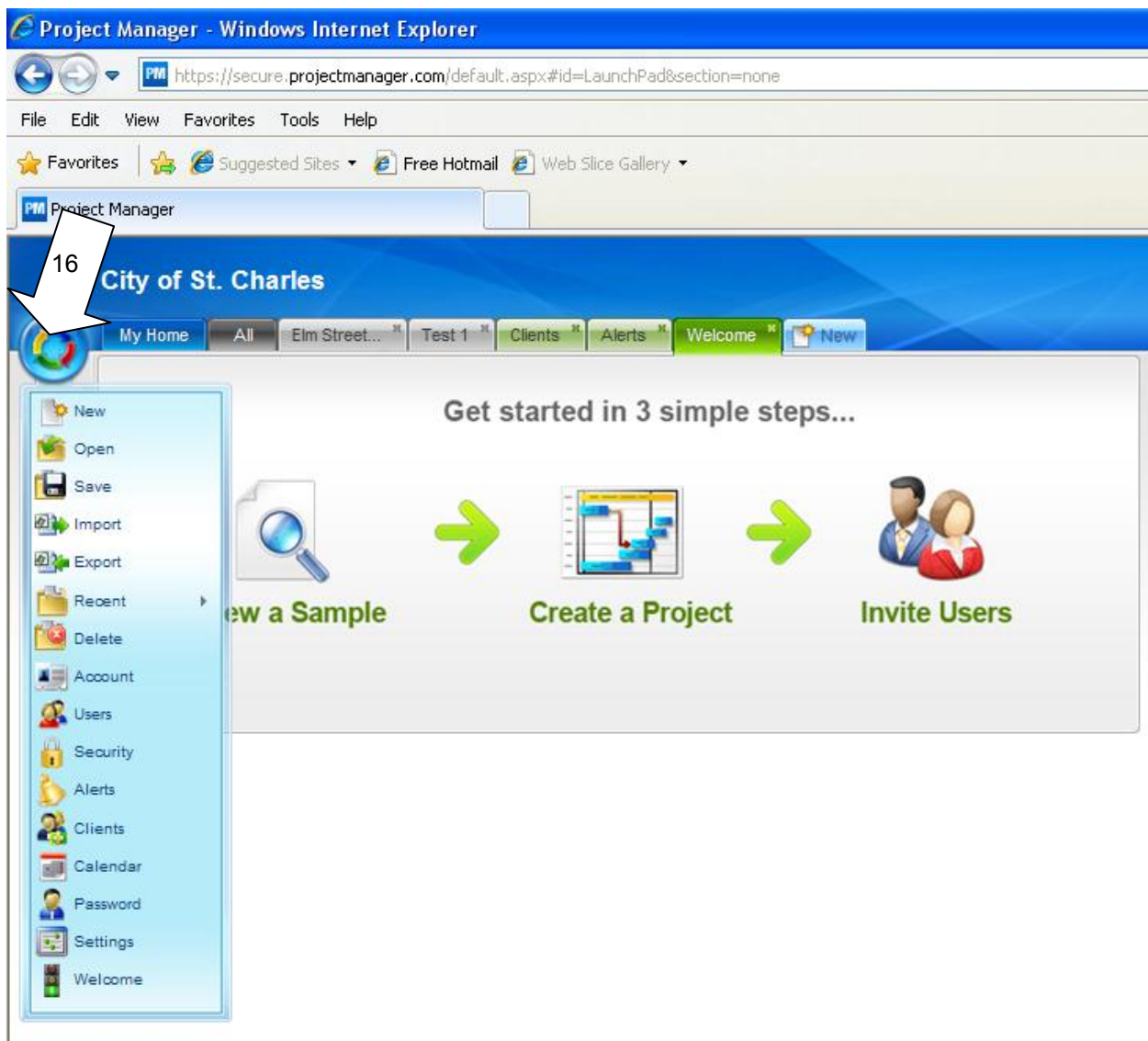
Test 1

Test 2

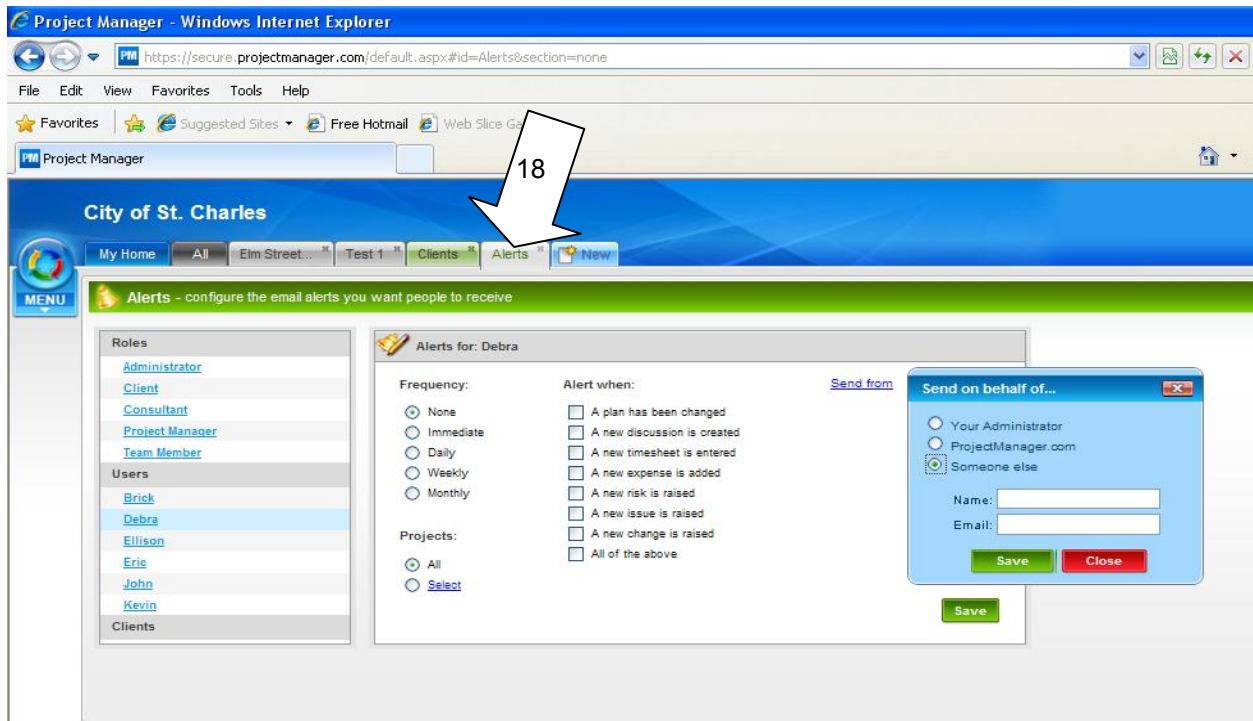
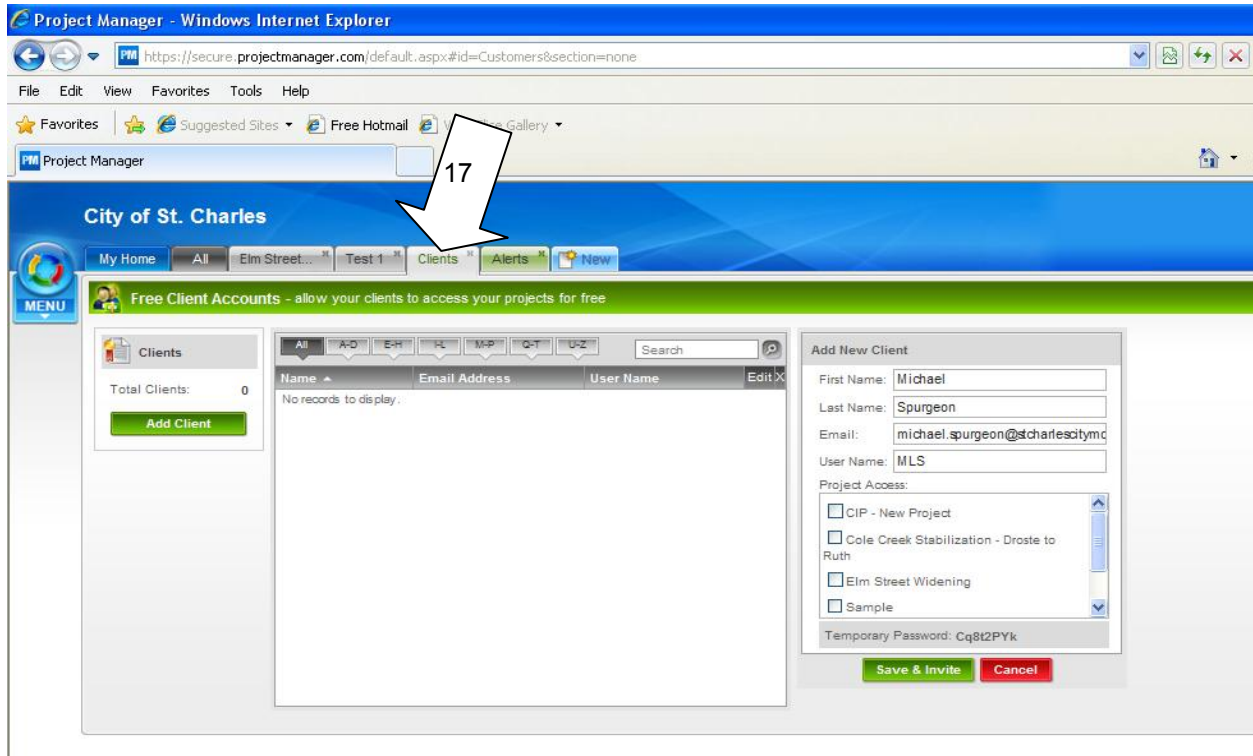
Deleted Projects

Name	Type	Date	Size
Project Charter.doc	Microsoft Word Document	11/25/2010 8:24:22 PM	278K

16. Access the “clients” and “alerts” tabs through the main “MENU” button.



17. Add project “clients” to allow project stakeholders limited, read-only access (Note: Always gain approval from the Design Sr. PM before granting client access rights).
18. Set “alerts” for project team members and clients according to the Project Charter or Communication Plan





## 2.1.2 CONSULTANT SELECTION

Once the Project Charter has been completed and approved, the PM will have a firm grasp on the project scope, conditions, and requirements. During the development of the Project Charter, the decision will be made among the project and administrative team whether the project requires professional services be engaged by an engineering consultant for all or some of the design. If the decision is made to hire a consultant, the selection of that consultant shall follow the process outlined here. For in-house designs, the PM will need to assemble additional project team members with appropriate background and expertise for the project. The PM is then responsible for developing the detailed scope and WBS and assigning responsibilities for tasks as part of the PMP. It's likely that some professional services will still be required for in-house designs (such as survey or geotechnical) in which case the PM should use the same consultant selection process described here to secure those services.

As most PMs in local government are now aware, Missouri State Statutes require professional services be selected on the basis of qualifications rather than cost. The PM shall follow Section 145 of the City's Code for the procurement of professional services. In selecting which firms will receive the project RFQ/RFP, the PM shall identify qualified firms based on the Engineering Division's Consultant Prequalification List and the current known workload of the listed consultants. The final list of consultants to receive the project RFQs/RFPs shall be approved by the Design Sr. PM and the City Engineer prior to distribution. Consultants expressing interest in providing professional services to the Public Works Dept. shall submit PMM Standard 9.5 PREQUALIFICATION FORM to the Engineering Division for review and approval prior to receiving project RFQs/RFPs.

The PM shall prepare the RFQ/RFP according to PMM Standard 9.6 and include the approved Project Charter with distributed RFQs/RFPs. This will assist consultants in preparing their responses appropriately. There is no minimum response time established but larger projects may need to allow as much as 4-6 weeks for a thoroughly researched response while smaller projects may require only a week. Since consultants are required to be prequalified by the Engineering Division, a schematic schedule and WBS with man-hours per professional per task are required with all RFQ responses. When RFQs/RFPs are issued, the PM shall update the schematic schedule in the online system based upon the response time and the anticipated internal review, selection, negotiation, and approval times.

When the RFQ/RFP responses have been received, the PM shall distribute them to three members of the Engineering Division (other Departments may be involved depending on the project) for evaluation and scoring along with a time-frame for completion. Scoring shall be completed according to PMM Standard 9.7, but scorers should look for consultants whose experience and technical approach express the best means and methods of reducing overall project costs. Upon collection of all final scores and evaluation with the Design Sr. PM, the PM shall prepare the appropriate routing package for selection of the design consultant as follows:

Project Type	Preapproval Recommendation	Final Approval*
Street and Traffic Projects	May require Street Committee or Stakeholder group approval (check with supervisor)	City Council consent agenda if fee is anticipated to be above \$30K DPW approval otherwise
Storm Water Projects	Requires BPW approval for anticipated fees above \$30K May require Stakeholder group	City Council consent agenda for anticipated fees above \$30K

	approval (check with supervisor)	DPW approval otherwise
<b>Waste Water Projects</b>	Requires BPW approval for anticipated fees above \$30K  May require Stakeholder group approval (check with supervisor)	City Council consent agenda for anticipated fees above \$30K  DPW approval otherwise
<b>Water Projects</b>	Requires BPW approval for anticipated fees above \$30K  May require Stakeholder group approval (check with supervisor)	City Council consent agenda for anticipated fees above \$30K  DPW approval otherwise

\*Note: Emergency Projects may only require DPW approval.

### 2.1.3 COSULTANT NEGOTIATION

Once final approval of the recommended consultant has been granted, the PM shall commence negotiations with the consultant. Before a final price for services can be determined, a detailed scope of work must be developed. The Project Charter and the consultant's technical approach will serve as the two primary resources for development of the engineering services scope. The PM has a variety of options available for scoping the project. If the project is relatively straight-forward, the PM can have the consultant submit their proposed scope for review. If the project is more complicated with considerable stakeholder interest, it may be appropriate to have a scoping meeting with the consultant, project team, and possibly other stakeholders. A number of tools and techniques are available to the PM and consultant for creating a thorough scope which can be as common or as experimental as needed. Some of these include:

10. Past similar project(s) – Use a previous scope from a similar project and reformat it – Useful for fast-tracking the scoping and getting under contract quickly
11. Basic Discussion Meeting – Create a set agenda to move through the elements of the project – useful when the project is more complicated and has formal requirements that must be met
12. Mind Mapping (also known as Cross-Fertilization) Meeting – Allow the team to begin from a central goal of the project and record all of the branches that spur from that central goal; redo the process for each goal and use the branches to create the scope – useful when the project has a number of interrelated issues with no clear, systematic way of addressing them
13. Provocation Meeting – Encourage team members to deliberately make stupid or illogical statements in which something taken for granted is not true (i.e. – “houses should not have roofs” leads to the idea of glass roofs or openings in the roof) – useful when the project requires a lot of creativity or innovation

The PM should consult with the Design Sr. PM and the City Engineer for the best approach.

During negotiations, it is important to obtain the best value for the services. Information is the most beneficial tool for determining appropriate scopes of work and associated levels of effort. The PM should consult the scopes of similar past projects, other staff members' experiences, other municipalities' experiences, standards for scopes/fees from professional publications, etc. The scope of work should be specific and directed to complete the project, but offer the PM enough flexibility to redirect certain tasks

without excessive contract change orders. If identified project risks represent possibilities for scope creep, contingency tasks and fees can be included for these risks. In other words, the total contract value can include sufficient fees to cover additional tasks, but the contract may stipulate that those tasks can only be authorized by the PM at a later time.

It is also important that the contract and scope clearly identify the responsibilities and expectations of the City and the consultant. It is critical that the PM thoroughly review the Project Charter with the consultant, including sections to be added as part of the PMP, to assure that project management expectations are included within the contract and scope. It may be desirable for the contract to make reference to the Project Charter. Other legal requirements and expectations are usually addressed by the following:

1. Always start with the standard agreement from PMM Standard 9.8 PROFESSIONAL SERVICES CONTRACT as the basis for the contract
2. Review any limitations of liability described in the contract
3. Assure general liability insurance complies with the City's requirements, lists the City as an additional insured, matches the company's legal name, and covers the nature of the work
4. Assure professional liability (errors and omissions) insurance coverage is sufficient, lists the City as an additional insured, matches the company's legal name, and covers the nature of the work
5. Review immigration law, sex-offender, disadvantaged business enterprise (if applicable) and other applicable purchasing forms are present and properly completed

Occasionally the consultant may request modifications to the City's standard agreement due to their own internal legal requirements or management expectations. Depending on the nature of the requests, the Dept. can usually accommodate them or develop acceptable alternate contract language. The PM should consult with Public Works administrative staff and the City's Legal Dept. when making these determinations.

Once the final contract is approved by the consultant and PM, the PM shall prepare the appropriate routing package for approval of the contract according to Section 145 of the City Code as determined by the contract fee. Preapproval recommendations of the contract follow the process described above for the consultant selection.

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#### 2.1.4 PROJECT KICK-OFF

Once the contract has been final approved the PM should organize a kick-off meeting with the project team that now includes the consultant. A face-to-face meeting allows team members to interact personally and gives full opportunity for effective communication. The PM and Consultant are expected to use the standard meeting agenda provided in PMM Standard 9.9 DESIGN KICK-OFF MEETING AGENDA. Although there may be additions to the agenda based on the type of project, it provides the key review items that must be covered at the kick-off meeting.

The kick-off meeting serves as the initial step for transition from the Project Charter to the Project Management Plan. By the conclusion of the kick-off meeting, responsibilities for all outstanding information needed for the PMP shall be assigned by the PM. In addition, all copies of data to be shared among project team members shall be completed at the kick-off meeting or a request list shall be generated with assigned responsibilities for collecting and distributing the data.

All project team members shall be provided access to the online system at the kick-off meeting and a review of the system's operation may be necessary for members unfamiliar with it. For consultant designed projects, the consultant should have already generated a WBS and project schedule to provide to the PM at the kick-off meeting for review and discussion. The PM and Design Sr. PM shall then review and approve the WBS and schedule as part of the PMP described in the next task.

## 2.1.5 PROJECT SPECIFIC TASKS

The Project Management Plan should be finalized within one week of the kick-off meeting. Once the project team and/or consultant have signed the design contract and PMP, there will be a number of project specific tasks that were included in the scope that are added to, or included within, the PMM Primary Tasks. The PM/Consultant need to incorporate these project specific tasks into the WBS and schedule within the online system. In addition, the other components of the PMP also need to be added to the online system. The final design contract and PMP shall be used by the PM/Consultant to finalize all project management items in the online system as follows:

1. The detailed project WBS and schedule (PMM Primary Tasks shall remain as rolled-up tasks, detailed project specific tasks shall be subtasks)
2. All resources entered and task assignments specified (PM shall assign resource planned effort for internal City staff team members upon consultation with staff and Design Sr. PM)
3. The milestone list with deliverables
4. Copies of any project cost estimates completed to this stage in the project folder
5. The change management plan (procedures for notification on scope changes)
6. All issues and risks with assignments and links to relevant tasks
7. The online document folder arrangement
8. All "clients" (read-only, limited access users) entered – these could be stakeholders, outside agencies, utility companies, etc.
9. The communication plan document uploaded and appropriate Alerts specified per user
10. The final PMP uploaded

Once uploaded, the Design Sr. PM shall review and approve the final online WBS and schedule.

## 2.2 PLANNING PHASE MANAGEMENT

### 2.2.1 SCOPE MANAGEMENT

Tasks	Procedures	End Product
Project Charter	Identifying known issues, risks, and standards makes communicating expectations to the project team easier	Final approved Project Charter Schematic online WBS

	<p>PM to enter new project into online system based on Project Charter</p> <p>Share Project Charter with project team and other stakeholders as may be necessary for buy-in</p>	
<b>Consultant Selection</b>	<p>Include Project Charter with issued RFQ/RFP</p> <p>Require schematic WBS in RFQ/RFP response</p>	<p>Schematic WBS with hours per professional per task</p> <p>Approved consultant selection with project management expertise that meets project goals</p>
<b>Consultant Negotiation</b>	<p>Use scoping tools and techniques to develop the final project scope</p> <p>Consult multiple information resources to determine appropriate fees for scoped services while including sufficient flexibility</p> <p>Thoroughly review the Project Charter, including sections to be added for the PMP, in order to assure the scope covers project management expectations</p> <p>Incorporate any outside agency approvals or permitting requirements in contract and scope</p>	<p>Negotiated and approved contract with scope of work clearly identified, detailed WBS, and detailed schedule.</p>
<b>Kick-Off and Project Specific Tasks</b>	<p>Follow standard kick-off agenda</p> <p>Transition from the Project Charter to the PMP</p> <p>Provide access to online system for project team</p> <p>Incorporate project specific tasks into the online WBS and schedule – PM and Design Sr. PM to approve</p>	<p>Final PMP</p> <p>Approved online WBS</p> <p>Online resource assignments and planned effort</p> <p>Milestone list with deliverables</p> <p>Change Management Plan</p>

## 2.2.2 QUALITY MANAGEMENT

Tasks	Procedures	End Product
<b>Project Charter</b>	Use Project Charter to specify project standards, required permits, and project constraints	Final approved Project Charter
<b>Consultant Selection</b>	<p>Use Prequalified Consultants to determine RFQ/RFP distribution list</p> <p>Select consultant with similar</p>	<p>Issued Consultant RFQ/RFP with Project Charter</p> <p>Approved consultant selection with</p>

	<p>experience and solid technical approach to meet project goals</p> <p>The PM should assemble additional project team members with appropriate background and expertise for in-house designs</p>	experience and technical approach that meet project goals
<b>Consultant Negotiation</b>	<p>PM to review compliance with all legal and purchasing requirements of the City</p> <p>Use the Project Charter to define project standards and expectations in contract and scope</p>	Final Approved Contract that includes standards of care and all City legal requirements
<b>Kick-Off and Project Specific Tasks</b>	<p>Consultant contract and/or PMP shall identify design standards to be used</p> <p>Review design standards and expectations at kick-off meeting</p> <p>Generate list of data sharing needs</p>	<p>Kick-off meeting minutes and action items</p> <p>Final PMP</p>

### 2.2.3 TIME MANAGEMENT

Tasks	Procedures	End Product
<b>Project Charter</b>	<p>Use Project Charter to identify the sequence and potential dates of SOWs, milestones, and deliverables</p> <p>Use standard "CIP – New Project" schedule in the online system as the basis for the schematic schedule</p>	<p>Final approved Project Charter</p> <p>Schematic online schedule</p>
<b>Consultant Selection</b>	<p>PM to update online schematic schedule based on RFQ/RFP response time and anticipated review/approval times</p> <p>Require schematic schedule in RFQ/RFP response</p> <p>PM to provide time-frame for completion of consultant scoring</p>	<p>Updated online schematic schedule</p> <p>Approved consultant selection with proposed schedule that meets project goals</p>
<b>Consultant Negotiation</b>	<p>PM to establish schedule for consultant negotiations and Council approvals</p> <p>Identify level of reviews that will be necessary for each milestone from Sr. PMs, City Engineer, ADPW, DPW, and Admin/Council at various design</p>	<p>Milestone for Final Negotiated Contract</p> <p>Milestone for Final Approved Contract</p> <p>Final Approved Contract that includes project schedule, milestones, and deliverables</p>

	<p>stages</p> <p>PM to establish milestones with deliverables in the consultant contract</p> <p>Incorporate any outside agency approvals or permitting requirements in project schedule</p>	
<b>Kick-Off and Project Specific Tasks</b>	<p>Finalize PMP within one week of kick-off meeting</p> <p>Add milestone to schedule for PMP completion</p> <p>PM to assign resource planned efforts to tasks for workload purposes</p>	<p>Final PMP</p> <p>Approved online Schedule</p> <p>Online resource assignments and planned effort</p> <p>Milestone list with deliverables</p>

#### 2.2.4 COST MANAGEMENT

Tasks	Procedures	End Product
<b>Project Charter</b>	<p>Use Project Brief cost estimates as basis for estimated costs throughout the planning phase</p> <p>Estimated costs should list unknowns which can translate into risks</p>	Final approved Project Charter
<b>Consultant Selection</b>	Select consultant whose experience and technical approach express best means and methods to reduce overall project costs	Approved consultant selection with technical approach that meets project goals
<b>Consultant Negotiation</b>	<p>Use tools and techniques to negotiate best value in services</p> <p>Assure that contract and scope contain appropriate flexibility and contingency tasks</p> <p>Assure that contract and scope clearly identify deliverables and associated fees</p>	Final Approved Contract that identifies stages of cost estimates as deliverables
<b>Kick-Off and Project Specific Tasks</b>	Review CIP and Project Charter project cost estimates at kick-off	Final PMP with all deliverable costs

#### 2.2.5 RISK MANAGEMENT

Tasks	Procedures	End Product
<b>Project Charter</b>	Incorporate scope, schedule, and cost unknowns as risks	Final approved Project Charter

		Issues and Risks entered online
<b>Consultant Selection</b>	<p>Include Project Charter with issued RFQ/RFP</p> <p>Select consultant whose technical and project management approach express best means and methods to meet project goals</p>	Approved consultant selection with technical approach and project management expertise that meet project goals
<b>Consultant Negotiation</b>	<p>PM to review compliance with all legal and purchasing requirements of the City</p> <p>“Assumptions” made in the contract and scope may translate to a project issue or risk</p>	<p>Final Approved Contract that complies with City requirements</p> <p>Updated online issues and risks</p>
<b>Kick-Off and Project Specific Tasks</b>	<p>Review PMP and online system at kick-off meeting</p> <p>Assign issue or risk mitigations and responsibilities within the online system</p> <p>Link issues and risks to tasks</p>	Final PMP with Risk Register

## 2.2.6 COMMUNICATIONS MANAGEMENT

Tasks	Procedures	End Product
<b>Project Charter</b>	Share Project Charter with project team and other stakeholders as may be necessary for buy-in	Distributed copies of the Project Charter
<b>Consultant Selection</b>	<p>Include Project Charter with issued RFQ/RFP</p> <p>Select consultant whose experience and public engagement expertise express best means and methods to meet project goals</p>	Approved consultant selection with project management and public engagement expertise that meet project goals
<b>Consultant Negotiation</b>	Carefully review Project Charter to assure that communication expectations are included in contract and scope	Final Approved Contract that identifies communication expectations
<b>Kick-Off and Project Specific Tasks</b>	<p>Face-to-face kick-off meeting</p> <p>Use Communication Plan to specify project PR requirements</p> <p>PM to enter “clients” in online system</p>	<p>Final PMP Communication Plan</p> <p>Online “Clients” specified</p> <p>Online “Alerts” specified</p>



## 3 DESIGN PHASE

### 3.1 DESIGN PHASE PRIMARY TASKS

#### 3.1.1 DATA SHARING AND SITE ASSESSMENTS

When the planning phase has been completed, the design phase can begin immediately. The initial task of the design phase is to complete the data sharing requests made during the planning kick-off. All relevant project data will be shared among the project team and online access to the data verified by the PM. This may include, but not be limited to:

14. Project Charter/PMP
15. Project maps
16. Copies of relevant master plan pages
17. Prior engineering studies
18. GIS data
19. Photos and/or video
20. Stakeholder input

Once data sharing and review is complete, it is highly recommended that selected members of the project team perform a site assessment through a field visit. A site assessment gives the project team the opportunity to familiarize themselves with the site and may reveal potential scope changes, project issues, or risks that may need to be addressed. In any case, the PM/Consultant shall complete a photo and/or video inventory of existing conditions in the project area. This inventory shall be stored in the project directory of the City's network and shared online.

#### 3.1.2 ALTERNATIVES ANALYSIS – CONCEPT PLANS

Accompanying the concept plans, some level of alternatives analysis typically takes place to finalize the design approach. This task is required to include scope and time for the project team to evaluate alternatives and weigh potential impacts. The project team should not overlook the right-of-way acquisition and/or relocation impacts of any alternatives. It is important for the PM and the project team to recognize it may be necessary to return to this task in an iterative process of design development in order to address issues or risks that occur throughout the project life cycle. It is rare for design of a selected alternative not to be recycled through another version of alternatives analysis for at least a portion of the project as the design progresses. The PM is responsible for recognizing these potentials and scoping and scheduling the work accordingly.

Project needs may dictate alternatives analysis results be shared with project stakeholders which may include the general public, adjacent property owners, utility companies, City Administration, City Boards/Task Forces, and City Council. The Communications Plan within the PMP shall identify if concept plans and/or alternatives analyses are to be shared with project stakeholders and on what schedule.

Concept plans are typically the initial stage of the engineering plan development process. Concept plans are considered high-level plans based on readily available information (typically aerial photography and GIS information) and may have already been completed during the initiation or planning phases of the project. A cost estimate +/- 30% of final project costs should be prepared in connection with Concept plans. All cost estimates must include estimated right-of-way acquisition costs as well. Concept plans shall include information according to PMM Standard 9.10 ENGINEERING DESIGN PLAN CHECKLIST.

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### 3.1.3 SURVEY

For most design projects, a field topographic survey will be necessary in order to develop engineering plans. Any project that may require the acquisition of fee-simple, rights, or interests in land must follow the City of St. Charles Survey Standards. Minimum requirements of the survey task shall encompass the following:

1. Survey contract ordered by PM if not already incorporated within the design contract
2. Survey limits map
3. Title reports for all land parcels to be impacted by the project
4. Vertical and horizontal datum specified
5. Public notifications of project survey sent to all properties within 100 feet of the project limits (use PMM Standard 9.14.3 SURVEY NOTICE).
6. Utility locates
7. Field survey and office work
8. Hard copy, PDF, and CAD drawings of survey submittal to PM (electronic copies shall be uploaded to the appropriate project folder in the online system)
9. PM review(s) and approval of field survey
10. Submit copies of the field survey according to the Communication Plan

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### 3.1.4 PRELIMINARY PLANS

Preliminary plans are the first level of engineering design based on field survey information. The preliminary plans are intended to allow preparation of a cost estimate +/- 20% of the final project cost. Minimum components of this task shall include:

1. Development of 30%-50% level engineering plans according to PMM Standard 9.10 ENGINEERING DESIGN PLAN CHECKLIST
2. The PM and project team shall review all outstanding risks and issues for adjustment to mitigation measures if necessary
3. The project team shall identify potential property impacts/desires during preliminary plan development and communicate those to the Right-of-Way Specialist
4. Hard copy and PDF of Preliminary Plan (sealed by a licensed MO Professional Engineer) and cost estimate submittal to PM (electronic copies shall be uploaded to the appropriate project folder in the online system)
5. Perform Field Check #1 with the project team
6. PM review(s) of Preliminary Plans
7. Design Sr. PM review(s) and approval of Preliminary Plans

8. Submit copies of the Preliminary Plans according to the Communication Plan
9. Secure necessary outside agency approvals of the Preliminary Plans

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### 3.1.5 RIGHT-OF-WAY PLANS

Refer to PMM Section 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS.

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### 3.1.6 FINAL PS&E (PLANS, SPECIFICATIONS, AND ESTIMATE)

Final PS&E refers to the preparation of final engineering plans, project specifications, and the final engineer's cost estimate. The final plans and specifications completed at the end of this task should represent 100% completion. Although, every PM should recognize that it takes a considerable amount of effort to reach a set of plans and specifications that can be considered 100% complete. This is especially true if right-of-way negotiation and/or condemnation are still underway at this project stage. The final cost estimate provided in this task should reflect the final project cost +/- 10% unless the project team determines that a sufficient number of unknowns remain.

1. Development of 95% level engineering plans (Pre-Final) according to PMM Standard 9.10 ENGINEERING DESIGN PLAN CHECKLIST
2. Development of Pre-Final Project Specifications using City of St. Charles Boilerplate Standards (Note: the Project Team will need to identify the appropriate contract time for the project construction according to any schedule constraints and working limitations that may apply)
3. Development of final cost estimate
4. Hard copy and PDF of Pre-Final PS&E submittal to PM (electronic copies shall be uploaded to the appropriate project folder in the online system)
5. Submit copies of the Pre-Final PS&E according to the Communication Plan
6. Secure necessary outside agency approvals of the Pre-Final PS&E
7. The Construction Sr. PM shall assign a CIPM to the project
8. The PM and project team shall review all outstanding risks and issues for adjustment to mitigation measures if necessary
9. Perform Field Check #2 with the project team (including the CIPM)
10. PM, CIPM, Design Sr. PM, Construction Sr. PM, and City Engineer review(s) of Pre-Final PS&E
11. Adjustment of Pre-Final PS&E for 100% level engineering plans (Final) according to PMM Standard 9.10 ENGINEERING DESIGN PLAN CHECKLIST, Final Specifications, and Final Estimate
12. Verification by the Right-of-Way Specialist that all right-of-way ownership, rights, or interests have been secured even if condemnation related litigation is pending
13. Verification that Final Utility Relocation Plans and Agreements have been secured

14. Hard copy and PDF of Final PS&E submittal to PM (electronic copies shall be uploaded to the appropriate project folder in the online system)
15. Submit copies of the Final PS&E according to the Communication Plan
16. Secure necessary outside agency approvals of the Final PS&E
17. PM, Design Sr. PM, Construction Sr. PM, and City Engineer review(s) and approval of Final PS&E

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### 3.1.7 BIDDING

With Final PS&E approval, the project construction bid should be ready for advertisement. The PM shall gain authorization to advertise the project bidding from the City Engineer and Director of Public Works. Construction bidding of projects shall follow the procurement process identified in Section 145 of the City's Code. Project construction bids shall be advertised according to the Communication Plan. Any Bid Addendum that must be issued shall follow PMM Standard 9.15 ADDENDA. The PM shall be responsible for updating the projected schedule in the online system based upon the bid advertisement and the projected review and construction authorization time.

After the bid opening, the PM shall prepare a bid tabulation of the results, identify any discrepancies, and post the bid tab in the appropriate project folder in the online system for the project team to review. Engineering Administrative Assts. shall also copy the bid tab to the network folder "BIDS" for future reference on other projects.

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### 3.1.8 CONSTRUCTION AUTHORIZATION

Construction authorization is the process of awarding the construction contract to the contractor. The PM and the CIPM are responsible for assembling the necessary documentation and obtaining authorization for construction. The minimum requirements for evaluation of the apparent low bidder should follow the acronym – C.E.R.B.S.:

21. **Capability** – The contractor has demonstrated they maintain consistent levels of necessary staff and equipment to complete the construction
22. **Experience** – The contractor has previously performed work similar in scope and size to the City's project
23. **References** – Other local government agencies that have hired the contractor confirm their projects were successfully executed on-time, on-budget, and with acceptable quality
24. **Bid Proposal** – The proposal was complete, accurate, and included all necessary documentation
25. **Schedule** – The schematic schedule submitted with the bid confirms the contractor understands the scope of the project and will be able to comply with the contract time

During this task, the PM and CIPM shall review the apparent low bidder's bid proposal and supporting documentation, make a recommendation to the appropriate project stakeholders, and prepare the final contract routing package for the Mayor and/or City Council. The intent of this task is to assure compliance with procurement laws in Section 145 of the City's Code.

It is important the PM consider the time and effort needed to complete this task when reviewing and updating the project schedule. The task may require several months for the concurrence of outside agencies, utility relocation agreements to be finalized, review by City Boards, Subcommittees, or Task Forces, and final readings by the City Council.

## 3.2 DESIGN PHASE MANAGEMENT

### 3.2.1 SCOPE MANAGEMENT

Tasks	Procedures	End Product
<b>Data Sharing/Site Assessment</b>	Categorize any potential future scope changes, issues, or risks impacted by site conditions	Uploaded project data Photo/Video Inventory Added issues or risks to the online system
<b>Concept Plan/Alternatives</b>	Assure scope allows sufficient evaluation of alternatives and stakeholder input  Identify permitting impacts associated with alternatives  Iterate elements of the project through this process to address issues/risks	Concept plans meeting PMM Standard  Completed alternatives analysis  Added issues or risks to the online system
<b>Survey and Preliminary Plans</b>	Order survey contract  Develop survey and preliminary plans  Identify potential property impacts	Approved Survey  PE Sealed Preliminary Plans  Outside agency approvals of Preliminary Plans
<b>Right-of-Way Plans/Documents</b>	Refer to <u>PMM Section 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS</u>	Refer to <u>PMM Section 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS</u>
<b>Final PS&amp;E</b>	Develop Pre-Final PS&E  Careful review of project specifications and bid form  Develop Final PS&E based on ROW negotiations	PE Sealed Final PS&E  Outside agency approvals of Final PS&E
<b>Bidding and Construction Authorization</b>	Assure scope allows sufficient pre-bid, bidding, and construction authorization tasks  Assure RCA's identify special contract considerations (e.g. past contractor experience, incentives, rejected bidders, etc.)	Authorization to advertise  C.E.R.B.S.

<b>All Tasks</b>	Review PMP and online system at all progress meetings	Weekly online updates*
	Potential scope creep items must be input as risks when they arise	Regular progress meetings per Communication Plan
		Regular milestone reports per Communication Plan

\*Consultants shall update the online system weekly with the actual task percentage complete and any new issues, risks, or potential changes.

The Design Sr. PM shall review progress of all projects weekly and review new issues, risks, or potential changes with the PM.

### 3.2.2 QUALITY MANAGEMENT

Tasks	Procedures	End Product
<b>Data Sharing/Site Assessment</b>	Complete collection/distribution of data for sharing among team  Site assessment completed with all project team members	Uploaded project data  Photo/Video Inventory
<b>Concept Plan/Alternatives</b>	Concept plans based on best available information  Project team and expert evaluation of alternatives  Allow stakeholder input  Permitting impacts identified	Concept plans meeting PMM Standard  Completed alternatives analysis  Added issues or risks to the online system
<b>Survey and Preliminary Plans</b>	Use City of St. Charles Survey Standards  Use City of St. Charles Engineering Design Standards  Perform Field Check #1	Completed title reports  Approved Survey  PE Sealed Preliminary Plans
<b>Right-of-Way Plans/Documents</b>	<u>Refer to PMM Section 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS</u>	<u>Refer to PMM Section 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS</u>
<b>Final PS&amp;E</b>	Use City of St. Charles Boilerplate Standards  Develop Pre-Final PS&E  Construction Sr. PM assigns CIPM  Perform Field Check #2 with Pre-Final Plans  Careful review of project technical specifications	Pre-Final PS&E  Final 2A Sheets  PE Sealed Final PS&E  Long-Term Operation and Maintenance Plan

	<p>Include 2A Sheets with Final PS&amp;E</p> <p>Establish Long-Term Operation and Maintenance Responsibilities</p>	
<b>Bidding and Construction Authorization</b>	<p>Promptly issue addenda when project bid changes are identified</p> <p>PM to thoroughly check bid proposals</p>	C.E.R.B.S.
<b>All Tasks</b>	<p>Review PMP and online system at all progress meetings</p> <p>Engineering plan submittals must meet checklist requirements</p> <p>PM sit-down reviews with Design Sr. PM</p> <p>Involve the Public Works operational division(s) that will ultimately be responsible for long-term operation and management of the project throughout the design process</p>	<p>Weekly online updates</p> <p>Regular progress meetings per Communication Plan</p>

### 3.2.3 TIME MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Product</b>
<b>Data Sharing/Site Assessment</b>	PM to monitor applicable milestones online	<p>Milestone for shared data</p> <p>Milestone for photo/video inventory</p>
<b>Concept Plan/Alternatives</b>	<p>PM to monitor applicable milestones online</p> <p>Allow stakeholder input</p>	<p>Milestone for concept plans</p> <p>Milestone for alternatives analysis</p>
<b>Survey and Preliminary Plans</b>	<p>PM to monitor applicable milestones online</p> <p>Allow stakeholder input</p>	<p>Milestones for survey submittal and approval</p> <p>Milestone for Field Check #1</p> <p>Milestones for preliminary plan submittal and approval</p>
<b>Right-of-Way Plans/Documents</b>	<u>Refer to PMM Section 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS</u>	<u>Refer to PMM Section 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS</u>
<b>Final PS&amp;E</b>	<p>PM to monitor applicable milestones online</p> <p>PM to assure sufficient schedule time for Sr. PMs, City Engineer, and Director of Public Works coordination and approvals</p>	<p>Milestone for Pre-Final Plan submittal</p> <p>Milestone for Field Check #2</p> <p>Milestones for Final PS&amp;E submittal and approval</p> <p>Milestone for ROW Specialist</p>



		verification  Milestones for outside agency approvals  Milestones for permit approvals
<b>Bidding and Construction Authorization</b>	PM to monitor applicable milestones online  Contractors required to submit anticipated construction schedules with bids  PM to assure sufficient schedule time for bid authorization and construction authorization processes	Milestone for construction bidding  Bid proposals with schedules  Milestone for construction authorization
<b>All Tasks</b>	Review PMP and online system at all progress meetings  Potential scope creep items must be input as risks when they arise  Risks must identify schedule impacts  PM and Design Sr. PM must review resource workload in order evaluate review time compliance  PM to use the baseline tool to evaluate schedule changes	Weekly online updates*  Regular progress meetings per Communication Plan  Regular project reports per Communication Plan  Monthly resource workload reports to Design Sr. PM for review

\*Consultants shall update the online system weekly with the actual task percentage complete and any new issues, risks, or potential changes.

The Design Sr. PM shall review progress of all projects weekly and review new issues, risks, or potential changes with the PM.

#### 3.2.4 COST MANAGEMENT

Tasks	Procedures	End Product
<b>Data Sharing/Site Assessment</b>	Upload available cost estimates to online system	Uploaded project data
<b>Concept Plan/Alternatives</b>	Cost estimates for alternatives should include unknowns which should translate to project risks	Cost Estimate @ 30% contingency*
<b>Survey and Preliminary Plans</b>	Develop Preliminary Plan Cost Estimate	Cost Estimate @ 20% contingency *
<b>Right-of-Way Plans/Documents</b>	Develop ROW Plan Cost Estimate	Cost Estimate @ 15% contingency*

<b>Final PS&amp;E</b>	Develop Pre-Final Cost Estimate Develop estimate of Long-Term Operation and Maintenance Costs Develop Final Cost Estimate	Cost Estimate @ 10% contingency* Long-Term Operation and Maintenance Estimate
<b>Bidding and Construction Authorization</b>	Follow Section 145 of the City's Code Careful review of project specifications and bid form Authorize payment of incentives and/or bonuses within the initial purchasing authorization	Uploaded bid tabulation Final construction contract Final approved P.O. including applicable incentives/bonuses
<b>All Tasks</b>	Potential change orders shall be reported online Risks must identify cost impacts	

\* Many project managers use a standard percentage contingency of total costs without really looking at project unknowns. The PM/Consultant should understand the risks associated with the project, and determine an appropriate amount of contingency for various elements. This will produce more accurate cost estimates.

Internal City staff to report project time using online time sheets. Engineering Administrative Assts. shall prepare in-house engineering hours adjustment from online reports.

Engineering Administrative Assts. shall use uploaded online cost estimates to prepare monthly project financial status reports.

### 3.2.5 RISK MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Product</b>
<b>All Tasks</b>	Review PMP and online system at all progress meetings Involve the Public Works operational division(s) that will ultimately be responsible for long-term operation and management of the project throughout the design process Assign issue or risk mitigations and responsibilities within the online system Link issues and risks to tasks Categorize any potential issues or risks impacted by site conditions Potential scope creep items must be	Final PMP with Risk Register Added issues or risks in the online system PE Sealed Final PS&E C.E.R.B.S. Weekly online updates* Bid quantities with necessary contingency factors Regular progress meetings per Communication Plan

	input as risks when they arise  Follow standard utility coordination phase  Include contingency factors in quantity totals of Final PS&E for “high-risk” bid items (e.g., lime, rock, piping, pavement, driveways etc.)	
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\*Consultants shall update the online system weekly with the actual task percentage complete and any new issues, risks, or potential changes.

The Design Sr. PM shall review progress of all projects weekly and review new issues, risks, or potential changes with the PM.

### 3.2.6 COMMUNICATIONS MANAGEMENT

Tasks	Procedures	End Product
<b>Data Sharing/Site Assessment</b>	Set-up online system project folders	Uploaded project data
<b>Concept Plan/Alternatives</b>	PM to determine information to be shared at stakeholder meeting	Distributed Concept Plans and Alternatives Analysis per Communication Plan  Stakeholder Meeting per Communication Plan
<b>Survey and Preliminary Plans</b>	PM to determine information to be shared at Public Meeting  PM to communicate property impacts to Right-of-Way Specialist	Survey notice sent to public  Distributed Preliminary Plans per Communication Plan  Public Meeting per Communication Plan
<b>Right-of-Way Plans/Documents</b>	<u>Refer to PMM Section 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS</u>	<u>Refer to PMM Section 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS</u>
<b>Final PS&amp;E</b>	PM to determine information to be shared at Public Meeting  Involve Operational Divisions in Long-Term Operation and Maintenance Planning	Distributed Pre-Final PS&E per Communication Plan  Distributed Final PS&E per Communication Plan  Public Meeting per Communication Plan
<b>Bidding and Construction Authorization</b>	PM to determine bidding methods per Communication Plan  Engineering Administrative Assts. to manage distribution of bid packages, distribution of addenda, and collection	Advertisement for Bid  Issued Bid Addenda  Verified Bid Tabulation

	of bid tabulation  PM and CIPM to prepare C.E.R.B.S., recommendations, and the final internal City contract routing package	Completed contract routing package for Construction Authorization
<b>All Tasks</b>	Use documents area of online system to share information  Use Communication Plan to specify distribution type, method, frequency, and request for action  Use PMM Standard 9.4 <u>COMMUNICATION PLAN</u>	Distributed cost estimates per Communication Plan

## 4 UTILITY COORDINATION PHASE

### 4.1 UTILITY COORDINATION PHASE PRIMARY TASKS

The utility coordination phase is one of the most important phases of any Public Works project. Failure to properly account for impacts to and from utilities can cause significant scope, schedule, and cost changes. These tasks are to be followed for every Public Works project regardless of the project type. For the purposes of the PMM, utilities internally operated by the City (primarily storm water drainage, sanitary sewer, and water distribution) must follow the utility coordination process followed by private utilities and described in this section. The PM/Consultant is expected to spearhead the utility coordination process and inc

#### 4.1.1 UTILITY SURVEY

The utility survey is completed as part of the design survey. Its purpose is to locate existing utilities within the project site after all utilities have been marked by the respective utility agencies. The Missouri One-Call system is used to locate on-site utilities. A “design ticket” is available through the One-Call system; however, if any excavation is performed (which includes possible digging for property corners) a standard ticket must be used. Utility agencies have three days to complete marking utilities at the project site from the time the ticket is received so the PM should be sure to coordinate the schedule of the field survey.

The most critical component of the utility survey is that the survey displays the location of all right-of-way lines and easements and the utility locations in relation thereto. Title reports should be completed in connection with surveying activities (preferably beforehand) to determine existing utility easements or rights to be located on the survey. Depending on the project complexity and the extent of risk associated with utility conflicts, the PM may wish to employ subsurface utility investigation services. Subsurface investigation is intended to expose the utility through digging, vacuum extraction, or other methods in order to verify exact locations and depths. Unless otherwise directed by the Design Sr. PM, this service shall be scoped during the project planning phase so that time is not lost and an appropriate cost can be determined. Internally operated City utilities shall always provide depth measurements during the utility survey.

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#### 4.1.2 UTILITY NOTIFICATION

The utility notification is the first opportunity to engage utility agencies in the project. Concept Plans and a copy of the approved survey shall be transmitted to each utility agency. The current project schedule should also be communicated with the utility agency in order to aid with their planning. The PM shall always request utility locations shown on the survey/plans be verified, approximate utility relocation costs (or unit costs), and a date for response as provided for in PMM Standard 9.14.4 UTILITY NOTICE. The PM should begin a utility coordination log (or require the consultant to do so) in order to track all utility correspondence, meetings, and responses. Utility agencies that identify none of their utilities are located in the project site, or that their utilities will not be impacted by the project, can be removed from the project Communication Plan.

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#### 4.1.3 PRELIMINARY UTILITY PLAN OF ADJUSTMENT

The primary goal of this task is to obtain a Preliminary Utility Plan of Adjustment. Utility agencies may not be willing to provide this for every project unless there are State or County obligations the agency must meet. However, at a minimum it should be possible for a utility agency to mark a Preliminary Utility Plan of Adjustment on the Project Preliminary Plans. Therefore, Project Preliminary Plans shall be transmitted to each utility agency when completed with a request for the agency's Preliminary Utility Plan of Adjustment.

The PM and/or consultant can facilitate the utility agency's response through an initial utility coordination meeting. This will be the second opportunity to engage utility agencies in the project progress. The outcome of this meeting should allow utility agency representatives to become familiar with the project and team, discuss utility impacts from and to the project, and identify if and when preliminary utility plans of adjustments will be generated. If utility agencies are unresponsive, the PM and/or consultant should document all communication attempts within the utility coordination log.

Once the Preliminary Utility Plan of Adjustment is provided, the project team should review the plan for completeness and assess possible costs, issues, and risks associated with the plan of adjustment. The project team should also evaluate possible design adjustments to avoid conflicts. When preliminary utility plan of adjustments have been thoroughly reviewed and coordinated with the utility agency, an agreement (or approval) of the preliminary utility plan of adjustment shall be documented by the PM.

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#### 4.1.4 UTILITY RELOCATION PLANS

The Utility Relocation Plans are the formal construction plans prepared by the utility agency to identify the scope of construction they will undertake to move or adjust their facilities. This process should begin with the Right-of-Way Plan Transmittal when the PM/Consultant shall identify the planned right-of-way/easement limits to the utility agency and request identification of further anticipated right-of-way/easement needs. This does not imply that the City shall be responsible for acquiring any additional right-of-way or easements, but it at least identifies possible coordination that can take place during right-of-way acquisition.

Once Pre-Final Plans are prepared, the PM/Consultant shall transmit the plans to all utilities known to be impacted by the project. The transmittal shall request the utility agency to submit utility relocation plans after review and coordination with the Project Pre-Final Plans within an appropriate time-frame. During this time-frame, it is preferable to hold a second utility coordination meeting where the Utility Relocation Plan and possible adjustments to the Project Pre-Final Plans can be discussed. Adjustments to the

Project Pre-Final Plans can be made following the utility coordination meeting. When the Utility Relocation Plans are received, the PM/Consultant shall begin review immediately and respond with comments or approvals as appropriate.

Ideally, with Utility Relocation Plans in-hand, the Final PS&E will be prepared based on the coordination that has been completed. Securing official Utility Relocation Plans from utility agencies can be a significant challenge for the PM/Consultant. Therefore, it is critically important that all communication with the utility agency be documented, but also that the project intentions be clearly communicated to the utility agency. The PM should consider sharing the project schedule on a regular basis or even granting online access to the utility agencies. Issues or risks identified as a result of significant utility conflicts, coordination, or problems should be identified by the PM/Consultant immediately as they arise so that communication with the agency is stirred and mitigation can begin.

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#### 4.1.5 UTILITY RELOCATION AGREEMENTS

Frequently, utilities are located within existing private easements owned by the utility agency. If this is the case, the utility typically has the right to recover the costs to relocate their facilities from the City. However, the PM should carefully review the original easement documents since these rights may be limited. For example, platted subdivision easements are provided for the benefit of the utilities to sell their utility and not necessarily a guarantee of continuous use.

When Utility Relocation Plans have been completed and utility rights have been determined, execution of Utility Relocation Agreements is typically needed to delineate the responsibilities of the utility and of the City. The PM and Design Sr. PM are responsible for obtaining the proposed relocation agreements from the utility agencies and reviewing the agreements for scope, content, and cost. Once the relocation agreements have been adequately negotiated by the PM and Design Sr. PM, RCAs should be prepared for Council approval of the agreements.

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#### 4.1.6 UTILITY RELOCATIONS

With utility relocation agreements executed and the project Final PS&E complete, the PM/Consultant should work with the utility agencies to have the relocation work scheduled. In scheduling, the utility agencies must typically make a determination of whether relocations are independent or dependent on the project construction. Ideally, a determination of the dependency of utility relocations is made simultaneously with execution of the utility relocation agreements. Independent relocations can be performed at any time and are not dependent on the completion of any project construction activities. Dependent relocations can only be completed once certain aspects of the project construction have been completed. There also may be portions of the relocations that are independent and other portions that are dependent depending on the type of project. The sharing of project schedules for the CIP project and the utility relocation must be facilitated by the PM. The PM will need to proactively and frequently communicate with the utility agencies to gain documented commitments for utility relocation schedules. In addition, the PM and CIPM shall coordinate a field verification with each utility company. Utility relocations shall be staked and reviewed in the field by the PM/Consultant, CIPM, Contractor (if applicable) and the utility company. Field staked relocations of utilities shall then be collected and transferred onto the design plans to be reviewed by the PM/Consultant, CIPM, and Contractor (if applicable) in order to verify no conflicts will exist with the completed project. In general, utility relocations will occur as follows:

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##### 4.1.6.1 INDEPENDENT RELOCATIONS

26. Contact information is shared between the City's project team and the utility agency team
27. Notice to Proceed (NTP) with relocation activities is issued by the PM to the utility agency
28. Field verification of the staked utility relocation is performed
29. Utility relocations are performed
30. Project plan adjustments may be needed depending on field changes made to the relocations (if adjustments must be made after this time, the PM/CIPM should be careful to document the schedule and cost impacts to the project)

#### 4.1.6.2 DEPENDENT RELOCATIONS

31. Written communication is received from the utility agency that specifically describes the dependency of their relocation on project construction
32. Project PS&E adjustments are made for any aspects of the dependent relocation that will constrain the City's Contractor
33. Project bidding proceeds
34. After bidding and contract award to a contractor, the CIPM schedules a third utility coordination meeting with the contractor and the utility agency to create a project plan and schedule for the dependent relocation activities
35. Field verification of the staked utility relocation is performed
36. Notice to Proceed (NTP) with relocation activities is issued by the Contractor to the utility agency once dependent construction activities are complete
37. Utility relocations are performed

## 4.2 UTILITY COORDINATION PHASE MANAGEMENT

### 4.2.1 SCOPE MANAGEMENT

Tasks	Procedures	End Product
Utility Survey	Request utility locates during field survey and identify locations in the plans	Approved survey with known utility locations shown
Utility Notification	Send Survey and Concept Plans to utility agency and request verification that existing utility facilities are shown correctly and may or may not need relocation	Utility response to concept plans
Preliminary Utility Plan of Adjustment	Send Project Preliminary Plans and request Preliminary Utility Plan of Adjustment	Preliminary Utility Plan of Adjustment  Adjusted Project Preliminary Plans (if applicable)



	Adjust project preliminary plans to minimize impacts to existing utilities  Coordinate with utility agency to resolve preliminary plans of adjustment and project scope	
<b>Utility Relocation Plans</b>	Send Project Right-of-Way Plans and Documents to utility agencies and request them to prepare Utility Relocation Plans  Coordinate with utility agency to resolve Utility Relocation Plans  Once Utility Relocation Plans are reviewed and approved, or if incorporated in Project Plans, transmit Final PS&E	Approved Utility Relocation Plans  Necessary utility relocation right-of-ways and easements obtained  Final PS&E that reflect or incorporates Utility Relocation Plans
<b>Utility Relocation Agreements</b>	Negotiate utility relocation agreements based on project impacts (if applicable)	Final Utility Relocation Agreement
<b>Utility Relocations</b> 38. Independent 39. Dependent	Assure dependent relocations are identified in the project Final PS&E	Final Utility Relocations
<b>All Tasks</b>	Follow PMM utility coordination process	Updated online WBS to incorporate utility coordination work  Added issues and risks online that may impact project

#### 4.2.2 QUALITY MANAGEMENT

Tasks	Procedures	End Product
<b>All Tasks</b>	Incorporate standards used by utility agency for adjustments if needed  Require utility agencies to provide detailed plans or to mark-up project plans in responses  Coordinate right-of-way and easement acquisition efforts if possible	Final Utility Relocation Plans  Final PS&E that coordinate with Utility Relocation Plans  Field verification prior to utility relocations

#### 4.2.3 TIME MANAGEMENT

Tasks	Procedures	End Product
<b>Utility Survey</b>	Assure all project utilities are marked	Milestone for approved survey

	on-site before completing survey	
<b>Utility Notification</b>	Communicate anticipated project schedule with Concept Plan submittal	Milestone for Utility Notification transmittals and verifications
<b>Preliminary Utility Plan of Adjustment</b>	Adjust project preliminary plans to minimize impacts to existing utilities	Milestone for Preliminary Plan transmittals
	Update online schedule based on utility coordination	Milestone for Preliminary Utility Plans of Adjustment
<b>Utility Relocation Plans</b>	Request utility agency to identify right-of-way and/or easement needs as early as possible	Milestone for right-of-way plan transmittals
	Use utility coordination meetings to finalize relocation plans	Milestone for Utility Relocation Plans
<b>Utility Relocation Agreements</b>	Review Utility Relocation Agreements with Public Works administrative staff and Legal Dept. as soon as available	Milestones for executed Utility Relocation Agreements
	Incorporate project schedule requirements into Utility Relocation Agreement if possible	
	Incorporate City Council approvals of agreements into project schedule	
<b>Utility Relocations</b> 40. Independent 41. Dependent	Determine if utility relocations can be done independently of construction or are dependent on construction as early as possible	Milestones for Independent and Dependent Utility Relocations
	Assure dependent relocations are identified in the project Final PS&E	
<b>All Tasks</b>	Follow PMM utility coordination process	Added issues and risks online that may impact project schedule
	Incorporate outside funding utility coordination timelines (if applicable)	
	Provide deadlines for utility agency responses	
	Grant utility agencies view-only access to the online system as "clients"	

#### 4.2.4 COST MANAGEMENT

Tasks	Procedures	End Product
<b>Utility Survey</b>	Determine existing utility locations with respect to easement limits as	Completed utility survey

	early as possible	
<b>Utility Notification</b>	Ask utility agencies to respond with approximate unit costs for relocations	Concept Plan cost estimate with utility relocations costs
<b>Preliminary Utility Plan of Adjustment</b>	Incorporate utility preliminary relocation cost estimates into preliminary plan cost estimate if anticipated to be a project cost	Preliminary Plan cost estimate with known utility relocations costs
<b>Utility Relocation Plans</b>	<p>Determine if Utility Relocation Plans are the responsibility of the utility or the project – adjust project cost estimates as necessary</p> <p>Coordinate with utility agencies to avoid relocations if possible</p> <p>Determine any additional right-of-way or easement needs that must be incorporated by the project</p>	<p>Right-of-Way and/or easement acquisition cost estimates that incorporate utility relocation needs</p> <p>Right-of-Way Plan cost estimate with known utility relocations costs</p> <p>Final PS&amp;E with known utility relocations costs</p>
<b>Utility Relocation Agreements</b>	<p>Negotiate utility relocation agreements based on project impacts (if applicable)</p> <p>Review original utility easement agreements from the title reports to determine if utilities are entitled to reimbursement for their relocation.</p> <p>Incorporate any utility agreement costs into project budget as needed</p> <p>Determine any prepayment arrangements that are needed</p>	<p>Updated project budget that includes Utility Relocation Agreement obligations</p> <p>Final PS&amp;E with approved utility relocations costs</p>
<b>Utility Relocations</b> 42. Independent 43. Dependent	Monitor utility relocation work if part of project to assure cost compliance with Utility Relocation Agreement	Project construction bids that reflect costs of any incorporated or dependent utility relocation costs
<b>All Tasks</b>		Added issues and risks online that may impact project budget

#### 4.2.5 RISK MANAGEMENT

Tasks	Procedures	End Product
<b>All Tasks</b>	Add issues and risks that are identified throughout the utility coordination process	Added issues and risks online that may impact project scope, budget, or schedule

#### 4.2.6 COMMUNICATIONS MANAGEMENT

Tasks	Procedures	End Product
<b>All Tasks</b>	<p>Add utility agencies within the Communication Plan and correspond accordingly</p> <p>Grant utility agencies view-only access to the online system as “clients”</p> <p>Hold utility coordination meetings in each task as determined by the Communication Plan</p> <p>Use a utility coordination log to track all communications with utilities</p>	<p>Updated Utility Coordination Log</p> <p>Utility Coordination meeting minutes and correspondence</p>

## 5 RIGHT-OF-WAY ACQUISITION PHASE

### 5.1 ROW ACQUISITION PHASE PRIMARY TASKS

Generally, the City makes every effort to follow MoDOT’s LPA Manual for right-of-way acquisition on all projects regardless of the type of project. This is partly because it gives the City a known standard to follow and partly because if outside funding is obtained during any phase of a project there is assurance that the City has followed Federal or State requirements during the acquisition of property. The acquisition of real property or interests and/or rights to real property may be one of the most important steps to any Public Works project because it is an issue of ownership. It is rare for a project to be contained completely within lands where the City owns all of the land or land rights needed to complete the project. As such, there are often impacts to privately owned land, meaning, the land owner has rights allow or not allow the City’s project to cause the proposed impact or to place conditions on any allowance. These rights are fundamentally protected by the U.S. Constitution. The Fifth Amendment, often popularized as the “right of silence”, happens also to deal with property as follows: “nor shall private property be taken for public use, without just compensation”. Although the City has the ability to condemn property or property rights through the power of “Eminent Domain”, it is the least desirable alternative for any City to use. In addition, once the power of eminent domain is engaged, a determination of “just compensation” no longer resides with the City or the property owner, but only with the Courts.

Therefore, the issue of right-of-way acquisition should never be taken lightly and should be carefully planned, evaluated, and coordinated by the project PM. The Public Works Department employs a Right-of-Way Specialist to complete much of this project phase. The Right-of-Way Specialist is responsible for completing certain tasks and assuring compliance with City and/or project specific standards. However, it is the PM’s/Consultant’s responsibility to plan, monitor, assist, and provide engineering judgment during this process.

#### 5.1.1 AUTHORITY TO ACQUIRE

The Authority to Acquire is the fundamental step to initiate the right-of-way acquisition process. As the name of this task indicates, authority is granted by the City Council and/or any outside funding agency

(such as MoDOT's "A-Date" through the LPA program) for the Public Works Department staff to begin acquisition. This task is typically started upon final approval of the preliminary plans since the design parameters are well established at this time and having this task completed allows acquisition to begin as soon as right-of-way documents are completed. However, in the case of outside agency authorization, this task cannot be started until right-of-way plans and documents have been completed as described in PMM Section 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS.

In order to obtain this authority, the PM must begin with a request to any recommending Boards or Committees (such as the Board of Public Works) if applicable to the type of project – the PM should check with their supervisor. Upon approval of the recommending body, an RCA is prepared by the PM for the closest City Council meeting immediately following the recommendation. Authority to Acquire is given by ordinance, requiring readings at two different Council meetings so the PM should be sure to provide adequate time in the project schedule.

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### 5.1.2 RIGHT-OF-WAY PLANS AND DOCUMENTS

Right-of-way plans are developed as the next step in the engineering design process beyond preliminary plans. Solely for the purpose of engineering design, the right-of-way plans represent the 70%-80% level plans. However, they are also intended to display limits of property or property rights and interests that must be acquired to complete the project in specific detail. Right-of-way plans should provide all information as identified by PMM Standard 9.10 ENGINEERING DESIGN PLAN CHECKLIST. In addition to right-of-way plans, right-of-way (or easement) documents are created simultaneously. The purpose of these documents is to identify additional property proposed to be acquired or encumbered (with additional easements) by the City for individual parcels of land. The documents serve as the exhibits for each deed executed during the acquisition process or during condemnation. Therefore, documents shall always be prepared according to City of St. Charles Survey Standards and shall be suitable for the recording of land transactions in the St. Charles County Recorder's Office.

A summary of all deliverables associated with this task is as follows:

1. Right-of-way plans representing 70%-80% level engineering plans according to PMM Standard 9.10 ENGINEERING DESIGN PLAN CHECKLIST.
2. Hard copy and PDFs of right-of-way plans (sealed by a licensed MO Professional Engineer), right-of-way documents (sealed by a licensed MO Professional Land Surveyor), and cost estimate submittal to PM (electronic copies shall be uploaded to the appropriate project folder in the online system). Right-of-way plans are intended to allow preparation of a cost estimate +/- 15% of the final project cost. Cost estimates should include right-of-way and relocation costs (if applicable)
3. A stakeholder response summary identifying how impacts/desires were addressed from any input received during preliminary plan development
4. Submit copies of the right-of-way plans and documents according to the Communication Plan

Once the right-of-way plans and documents are completed, the PM is responsible for reviewing the plans as well as each document. Comments are then provided to the designer or consultant so that revisions can be made. Once all comments have been addressed and the right-of-way plans and documents have been approved by the PM, all items shall be provided to the City's Right-of-Way Specialist.

At this point, the Right-of-Way Specialist becomes largely responsible for completing the remaining right-of-way acquisition tasks, but will rely heavily on the rest of the project team to resolve engineering related issues. The PM remains responsible for monitoring the progress of the acquisition tasks, updating the on-line system with input from the Right-of-Way Specialist, and facilitating any support decisions needed during the acquisition process.

Typically, nothing precludes the development of right-of-way plans and documents from beginning immediately upon final approval of the preliminary plans, meaning, that this task may run concurrently with Authority to Acquire. A major exception to this practice that each PM should consider as they create their WBS is whether stakeholder input may be sought on the preliminary plans that would impact the creation of the right-of-way documents. In this case, the PM will want to link the start of this task to the conclusion and review of stakeholder input.

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### 5.1.3 APPRAISALS

Once the finalized right-of-way documents have been provided to the City's Right-of-way Specialist, an approximation of value of the land or land rights/interests being acquired must be made. This is typically done through an appraisal process. Depending on a number of factors, including the complexity of the value approximations, outside funding, the type of properties being acquired, and the size of the acquisitions, the City's Right-of-way Specialist will decide whether appraisals can be determined using in-house resources or through contracted appraisal services. If contracted appraisal services are to be used, they must be secured through the City's procurement process. The PM will need to make certain this has been accounted for in the WBS and project schedule.

In order for accurate appraisals to be completed, care must be taken to assure the information provided for the appraisals is accurate. It is important that the impacts to each property due to the proposed project are clear in the plans and documents because impacts to property can be impacts to value. The following items must be carefully considered in preparation for the appraisal process:

- a. Appraisals typically require property inspections to be completed and contact with the property owner. At some time prior to or during the appraisal process, the Right-of-way Specialist must formally notify property owners of the project and the intent to acquire land or land right/interests. In most cases, property owners should already be aware of the project due to public engagement activities.
- b. Early title work obtained at the time of the initial survey helps assure the quality of the land information including proper ownership and existing encumbrances. However, title work may need to be updated depending on the length of time that has passed since the original survey.
- c. Land areas proposed to be acquired or encumbered should fully and properly reflect the needs of the project. The PM should carefully review the plans and the land descriptions to assure that adequate space is being provided for all of the project needs including construction access and future maintenance. It should also be clear to the appraiser what additional areas of land will be owned by the City or encumbered with additional rights (easements) of the City.
- d. The final state of the land after the project is completed should be clearly shown on the plans. For example, will a large embankment in front of the parcel limit driveway access or will proposed improvements (such as retaining walls, guard rails, or steep slopes) alter the appearance of the property?

- e. It must be clear to the appraiser if the relocation of residents or of personal property or both will be required as part of the acquisition process.
- f. According to the Federal Uniform Relocation Act, appraisals values made over \$10,000 require review appraisals to be completed. In nearly all cases, this procedure needs to be followed; therefore, the Right-of-way Specialist may need to secure review appraisal services as well.

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#### 5.1.4 NEGOTIATIONS

Once initial appraisals are complete and the Right-of-way Specialist has reviewed and agreed with the findings, the negotiation process can be started. This task is initiated by the distribution of offers letters by the Right-of-way Specialist. Initial offers are based on the values determined during the appraisal task and follow the form prescribed by PMM Standard 9.14.6 RIGHT-OF-WAY/EASEMENT OFFER LETTER. After sufficient time has passed since the receipt of the offer letters, and if signed acquisition agreements have not been returned to the City, the Right-of-way Specialist makes contact with the property owners in order to negotiate the acquisition. As the negotiations proceed, it is likely that property owners will have varying degrees of requests, concerns, or problems that may impact the schedule, cost, or final condition/quality of the project. The Right-of-way Specialist will need to input these items as issues or risks in the online system and assign resources for resolution.

It is difficult for the Right-of-way Specialist and the PM to forecast the amount of time it will take to complete the negotiation process. There may be outside funding or other project deadlines that dictate when negotiations must be concluded and the condemnation process started. The PM will want to plan the project schedule based on any of these project constraints that may be known. At a minimum, the Federal Uniform Relocation Act requires good faith negotiations be conducted for 60 calendar days from the time of the initial offer before condemnation can start.

The Design Sr. PM will determine whether an outside consultant is needed for contracted right-of-way acquisition services based on workload. If an outside consultant is used for contracted right-of-way acquisition services, the PM is responsible for securing, negotiating, and contracting those services. The PM must incorporate contracted acquisition services into the project planning and scheduling to assure the contracting of these services does not interfere with the progress of the project. Once under contract, the PM assigns progress reporting expectations to the firm, requests the Design Sr. PM to grant online permissions as necessary, and then monitors the firm's contract and progress.

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#### 5.1.5 CONDEMNATIONS (AS NECESSARY)

As described earlier, the use of eminent domain through the condemnation process is the least desirable outcome for right-of-way negotiations. Nevertheless, due to schedule or budget constraints, it is sometimes unavoidable. The Design Sr. PM and the Right-of-way Specialist must obtain authorization from the City Engineer and the Director of Public Works prior to beginning the condemnation process.

Once it has been decided that condemnation must be used, the condemnation process can be considered to start retroactively from the time of the initial offer letters. Condemnations must be completed using contracted professional legal services. The Right-of-way Specialist is responsible for securing these services, monitoring the progress, and managing the contract. However, the Right-of-way Specialist and the contracted attorney will frequently coordinate with the City's Legal Dept. during the course of the condemnation proceedings. In general, the condemnation task consists of the following sub-tasks:



- a. Condemnation Notice – Property owners are put on notice that the City may use condemnation in order to acquire the property or rights/interests (typically considered the to be the initial offer letter).
- b. Filing of the Condemnation Suit – The contracted attorney files the appropriate paperwork with the Courts to initiate a law suit by the City against the property owner in order to obtain by eminent domain the property or property rights/interests.
- c. Serving of the Condemnation Defendants – Property owners and any interest holders in the property are legally “served” with the filed lawsuit. Interest owners in the property could include mortgage holders, utilities possessing easements on the property, lease holders, or any number of other entities that may have certain rights within the property.
- d. Condemnation Hearing – Once all property owners and interest holders have been served, a Condemnation Hearing is set where the City’s contracted attorney will present the argument on behalf of the City and a judge will decide if the condemnation can proceed. It can take several weeks or even months to serve all property owners and interest holders and have a Condemnation Hearing scheduled. The PM must coordinate with the Right-of-way Specialist to plan the project WBS and schedule accordingly.
- e. Commissioner’s Hearing – If the judge determines that the City has made a good faith offer at the Condemnation Hearing, the right to condemn is granted and a Commissioners’ Hearing is set, usually within a few weeks. At the time of the Commissioners’ Hearing, a group of real-estate professionals hears arguments from both sides, views the property, and establishes an award amount for the land or rights/interests. The City can now take ownership of the condemned land or rights/interests if the City chooses to pay the award amount through the Court. The City typically has 10 days to decide whether or not to accept the Commissioners’ award. The acceptance of the award typically triggers the project Final PS&E and proceeding with bidding.
- f. Condemnation Trial – Although the City now has ownership and can proceed with the project, the property owner may appeal the decision of the Commissioners by taking the condemnation to trial. It can take several years to resolve the final award amount during a trial process and the Right-of-way Specialist must oversee this process throughout its duration.

## 5.2 ROW ACQUISITION PHASE MANAGEMENT

### 5.2.1 SCOPE MANAGEMENT

Tasks	Procedures	End Product
Authority to Acquire	PM to draft pre-authorization request to recommending boards/committees followed by RCA for Council authorization.	Ordinance granting authorization to acquire property and/or property rights/interests by donation, negotiation, or eminent domain
Right-of-way Plans and Documents	Develop right-of-way plans and documents  Address stakeholder comments in development of right-of-way documents	Approved right-of-way plans and property exhibits and descriptions for individual parcels within the project limits  Stakeholder input response summary

	<p>Identify if contracted appraisal or review appraisal services will be needed</p> <p>Identify if removals or relocations will be needed so the PM can provide adequate project scope</p> <p>Notify property owners of project</p>	Distributed property owner notices
<b>Appraisals</b>	<p>Secure contracted appraisal services as needed</p> <p>Title work to be updated as needed – determined by Right-of-way Specialist</p> <p>Provide approved right-of-way documents to appraiser</p>	<p>Executed appraisal services agreements (and review appraisal services if needed).</p> <p>Final estimations of value or approved final appraisals and review appraisals</p>
<b>Negotiations</b>	<p>Design Sr. PM to make determination of need for contracted right-of-way acquisition services</p> <p>Initial offer letters are distributed to the property owners impacted by the project</p> <p>Conduct negotiations with property owners</p>	<p>Initial acquisition offer letters</p> <p>Executed right-of-way documents and/or sale agreements or statements of non-resolution</p> <p>Relocation services agreements (as needed)</p>
<b>Condemnations (As Necessary)</b>	<p>Right-of-way Specialist to obtain authorization to condemn</p> <p>Right-of-way Specialist to secure contracted legal services to manage condemnation process</p> <p>PM and Right-of-way Specialist to coordinate all work items that may be necessary to support the condemnation</p>	<p>Executed legal condemnation services agreement</p> <p>Condemnation award</p>
<b>All Tasks</b>	<p>Follow PMM right-of-way acquisition process</p>	<p>Updated online WBS to incorporate right-of-way acquisition work</p> <p>Added issues and risks online from right-of-way acquisition activities that may impact project</p>

## 5.2.2 QUALITY MANAGEMENT

Tasks	Procedures	End Product
<b>Authority to Acquire</b>	Pre-authorization requests and RCA should clearly describe project as well as the intent to acquire by all	Pre-authorization memo and RCA containing proper information.

	applicable methods (donation, negotiation, and eminent domain).	
<b>Right-of-way Plans and Documents</b>	<p>Incorporate Title Work from survey and update as needed</p> <p>Use City of St. Charles Survey Standards</p> <p>Use City of St. Charles Engineering Design Standards</p> <p>Property exhibits and descriptions sealed by a MO PLS</p> <p>PM to review each property exhibit and description</p>	Approved right-of-way plans and property exhibits and descriptions for individual parcels within the project limits
<b>Appraisals</b>	<p>Assure property information in the plans and document properly reflects title work and that title work is updated as needed</p> <p>Assure project impacts to properties are clearly identified in the plans and documents, including removals and/or relocations</p> <p>Conduct review appraisals as required</p>	Final estimations of value or approved final appraisals and review appraisals (I/A)
<b>Negotiations</b>	PM and project team must support the Right-of-way Specialist with expert responses and site meetings to resolve engineering issues	Executed right-of-way/easement documents and/or sale agreements with well documented details of obligations or statements of non-resolution
<b>Condemnations (As Necessary)</b>	<p>Use professional legal services for the condemnation process</p> <p>Appraisals should follow NAIFA and IRWA standards to be credible during condemnation</p> <p>PM and project team must support the Right-of-way Specialist with maps, exhibits, deposition time, and other items necessary for the condemnation</p>	<p>Executed legal condemnation services agreement</p> <p>List of credible expert witnesses</p> <p>Condemnation award</p>

### 5.2.3 TIME MANAGEMENT

Tasks	Procedures	End Product
<b>Authority to Acquire</b>	Obtain the Authority to Acquire as soon as possible after the completion	Milestone for ordinance approval

	of Preliminary Plans	
<b>Right-of-way Plans and Documents</b>	PM and project team should determine the level of stakeholder input on Preliminary Plans prior to preparation of right-of-way documents	Milestones for right-of-way plans and documents submittals and approvals
<b>Appraisals</b>	Secure appraisal services during the time right-of-way documents are being prepared	Summary tasks for approved appraisal and review appraisal (I/A) services contract(s)  Summary tasks for accepted appraisals and review appraisals (if applicable)
<b>Negotiations</b>	Offer small incentives to property owners for early signing  PM and project team must support the Right-of-way Specialist with timely responses and site meetings to resolve engineering issues quickly  Negotiation schedule should correspond with the number and complexity of acquisitions	Summary task for initial offer letters  Summary task for negotiations or non-resolutions
<b>Condemnations (As Necessary)</b>	Follow PMM standard condemnation process  PM to coordinate with Right-of-way Specialist on duration of condemnation sub-tasks based on the number and complexity of the acquisitions	Milestone for condemnation award
<b>All Tasks</b>	PM to coordinate review of online system with Right-of-way Specialist to maintain regular updates of project schedule during acquisition	Weekly online updates  Monthly acquisition summary updates

#### 5.2.4 COST MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Product</b>
<b>Authority to Acquire</b>	Incorporate all anticipated professional services (appraisals, legal counsel, relocation, etc.) into cost estimating and project budgeting	Updated project budget with professional services and right-of-way and relocation (I/A) estimates
<b>Right-of-way Plans and Documents</b>	Right-of-way and relocation cost estimate to be supplied by consultant or Right-of-way Specialist	Cost Estimate @ 15% contingency* including right-of-way and relocation costs
<b>Appraisals</b>	Appraisals should be reviewed carefully for possible errors or	Final estimations of value or approved final appraisals and review appraisals

	omissions	(I/A)
<b>Negotiations</b>	<p>Look for possible design modifications that can address property owner concerns while reducing project costs</p> <p>Evaluate costs of condemnation against settlement costs with property owners</p>	Updated project budget with right-of-way and relocation results
<b>Condemnations (As Necessary)</b>	<p>Evaluate project budget once condemnation begins for funding of probable condemnation awards</p> <p>Project team should evaluate the probability and budget impacts of win/loss on condemnation appeals before project bidding</p>	Evaluation of project budget after condemnation awards and appeal impacts

## 5.2.5 RISK MANAGEMENT

Tasks	Procedures	End Product
<b>Authority to Acquire</b>	Identify if there are inherent political issues or perceptions that could impact the Authority to Acquire	Added issues and risks to online system
<b>Right-of-way Plans and Documents</b>	<p>Clearly depict right-of-way/easement limits within the plans and documents</p> <p>Clearly identify the final state of the property after construction</p> <p>Property exhibits and descriptions sealed by a MO PLS</p>	<p>Approved right-of-way plans and property exhibits and descriptions for individual parcels within the project limits</p> <p>Stakeholder input response summary</p>
<b>Appraisals</b>	Appraisal reviews should identify possible property owners' (or their legal representation) protests of information within the appraisal	Completed appraisal reviews
<b>Negotiations</b>	<p>The final state of any property after project completion should be clearly explained to property owners</p> <p>Identify and justify possible "special benefits" to property owners within initial offer letters</p> <p>All representations made to property owners relative to project obligations should be clear and in writing within the executed documents</p> <p>Identify possible conflicts of interests within the project team or</p>	<p>Initial acquisition offer letters</p> <p>Executed right-of-way/easement documents and/or sale agreements with well documented details of obligations or statements of non-resolution</p> <p>Completed individual property negotiation files</p> <p>Project team review meeting of completed negotiations and executed documents</p>

	<p>stakeholders and address undue influence by project stakeholders with supervisors</p> <p>Describe long-term maintenance obligations of the City and/or the property owner within the executed documents</p> <p>Agitated, aggressive, or volatile property owners shall only be visited when two City staff members are present</p> <p>Property owners that make or insinuate physical threats against City staff shall be reported to City police</p>	
<b>Condemnations (As Necessary)</b>	<p>Have a legal professional review all plans, documents, and negotiation correspondence as those documents are produced (prior to condemnation)</p> <p>Project team should evaluate the probability and budget impacts of win/loss on condemnation appeals before project bidding</p>	<p>Executed legal condemnation services agreement</p> <p>Evaluation of project impacts from condemnation awards and probable appeals</p>
<b>All Tasks</b>	Use online system to identify issues or risks from right-of-way acquisition activities that may impact project	Added issues and risks to online system

#### 5.2.6 COMMUNICATIONS MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Product</b>
<b>Authority to Acquire</b>	Issue notice to property owners of project impacts and needs for right-of-way/easements at the beginning of the acquisition process	Distributed property owner notices
<b>Right-of-way Plans and Documents</b>	Make submittals of right-of-way plans and documents according to the project Communication Plan	Distributed right-of-way plans and documents per Communication Plan
<b>Appraisals</b>	Make appraisal information available to all property owners as required by the Federal Uniform Relocation Act	Accepted appraisals on-file and distributed per Communication plan
<b>Negotiations</b>	Right-of-way Specialist to submit monthly report on acquisitions completed and remaining to PM	Initial acquisition offer letters Monthly acquisition summary updates
<b>Condemnations (As Necessary)</b>	Use contracted professional legal services for distribution ("serving") of condemnation documentation to all	Completed "serving" of condemnation documentation to all property and

	property and interest owners	interest owners
<b>All Tasks</b>	<p>Determine level of stakeholder interests in ROW acquisition process early and adjust project Communication Plan accordingly</p> <p>Distribute copies of acquisition status and information according to the project Communication Plan</p>	<p>Updated Communications Plan</p> <p>Monthly acquisition summary updates</p>

## 6 CONSTRUCTION PHASE

### 6.1 CONSTRUCTION PHASE PRIMARY TASKS

The construction phase is considered to start once the award of the construction has been granted by the City Council. During the construction phase, the management responsibilities of the project transition from the Engineering PM to the Construction Inspector Project Manager (CIPM) though the CIPM should have been involved in the project since Field Check #2. The scope of work for construction is identified by the engineering design drawings and specifications. These are essentially the “Project Plan” for construction, though details now need to be supplied by the contractor as to “HOW” that work now proceeds. Therefore, during the construction phase, project management relates more to monitoring the prosecution of the project design drawings and specifications.

Communication prior to and during construction may be the most important part of the project Communication Plan. Therefore, the PM should assemble the project team to verify and finalize the project Communication Plan at the beginning of the construction phase or just prior to it during bidding. The Communication Plan should specifically address the internal distribution of construction information, public notice procedures for construction, emergency notice procedures, and the ongoing communication during construction.

#### 6.1.1 CONSTRUCTION CONTRACT DOCUMENTS

The CIPM is responsible for the collection and final execution of all construction contract documents. Once the construction contracts are approved by the City Council and executed by the Mayor, they are returned to Engineering,. The CIPM sends the executed contracts to the contractor and then collects the final signed documents from them within a few days along with all remaining construction contract documents. The full package of required construction contract documents consists of the following:

44. Executed construction contracts by the City and the Contractor
45. Executed Bonds – Bid, Payment, and Performance
46. Proper Insurance Certificates – Listing proper business names, coverage types and amounts, additional insured, etc.



47. Contract required procurement forms from the project specifications (varies depending on project type) – May include Equal Opportunity Employment (EOE), Proof of Lawful Presence, E-Verify, Disadvantage Business Enterprise (DBE), and other required forms

Once all of this information has been collected, the CIPM shall submit copies of the full package to the City's Legal Dept. for their final review and records, the City Clerk's office for permanent City records, and keep one copy in the Engineering Division project file as described in PMM Section 9.12.1.2 CONSTRUCTION FILES.

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### 6.1.2 MATERIALS TESTING/SHOP DRAWINGS/SURVEY STAKING

The CIPM needs to coordinate three key items related to the initiation of full construction of the project. These are:

48. Materials Testing – Specialized scientific sampling, testing, and measuring performance of construction materials to assure compliance with the project technical specifications
49. Shop Drawing Reviews – Detailed drawings prepared by the contractor or the contractor's materials supplier(s) of individual components of the construction (retaining walls, equipment, pumps, storm structures, etc.)
50. Survey Staking – Completion of survey work to stake reference points for the positions and elevations of the planned improvements

Engineering Division maintains an annual on-call services contract for materials testing in a nominal amount (typically around \$25,000) that can be used on any CIP project. However, the CIPM along with the Construction Sr. PM should review the anticipated level of materials testing needed for the project. If the cost of materials testing services for the project are going to be substantial (typically over \$10,000), a project specific contract will need to be ordered. If a separate contract is needed, the CIPM should proactively plan for materials testing by securing these services early in the bidding process.

Required shop drawing submittals are usually identified in the project specifications. The contractor needs to submit these to the CIPM as early after the execution of the contract documents as possible. Once received the CIPM shall review the shop drawings and then provide their comments along with copies of the shop drawings to the Construction Sr. PM who has final approval authority of the shop drawings. Revisions may be needed from the contractor prior to final approval and the CIPM will need to communicate these needed revisions.

Construction survey staking is usually included in the contract documents as the contractor's responsibility. However, in order to facilitate independent utility relocations, stage construction, or other reasons, it may be necessary for the CIPM to have portions of the project pre-staked prior to the contractor's staking, or even prior to bidding the project. Pre-staking can be completed by the design consultant, a contracted surveyor, or by City staff; however, the CIPM is responsible for coordinating the pre-staking. The CIPM is also responsible for ascertaining the planned start and duration of construction staking from the contractor and monitoring its completion. When finished, the contractor's surveyor is required to provide "cut-sheets" and "point files" for the CIPM to review but the accuracy of all staking is ultimately the responsibility of the surveyor.

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### 6.1.3 PRE-CONSTRUCTION MEETING

Upon full execution of the construction contract documents package, the CIPM can schedule and hold the pre-construction meeting. The CIPM must notify the contractor that detailed construction tasks (WBS) and schedule must be provided by the time of the pre-construction meeting. The pre-construction meeting is intended to assemble all parties where pertinent construction topics can be discussed in preparation for construction. The CIPM should verify all participants with the Construction Sr. PM, but participants typically include:

51. Appropriate Department of Public Works staff – This always includes the PM, CIPM, and Construction Sr. PM, but may also include the Director, City Engineer, Street Superintendent, Water Systems Manager, Design or Traffic Sr. PMs, etc. depending on the type of project
52. The prime Contractor and their appropriate staff members, suppliers, and subcontractors selected by the contractor
53. The design consultant, surveyor, and/or other sub-consultants
54. Representatives from impacted utility agencies
55. Representatives from outside funding or permitting agencies (MoDOT, MDNR, etc.) or from other impacted local government agencies (County, St. Peters, etc.)
56. Representatives from other City Departments impacted by the project or that may be needed for input (Parks, Police, Fire, Media, etc.)
57. Representatives from appropriate project stakeholders that may need to be involved or aware of the construction planning (Homeowners Associations, Neighborhood Groups, Businesses or Business Associations, etc.)

The CIPM shall use the PMM Standard 9.16 PRECONSTRUCTION MEETING AGENDA to plan and conduct the pre-construction meeting. This agenda readily identifies the needed standard discussion topics for the meeting; however, the CIPM should be sure to add specialized topics that are project specific.

Upon conclusion of the pre-construction meeting, the construction tasks and schedule shall be clearly set and the CIPM shall issue the Notice to Proceed (NTP) per PMM Standard 9.14.8 NOTICE-TO-PROCEED (CONTRACTOR). The CIPM should not withhold the NTP if, in the opinion of the Construction Sr. PM, the City is ready for the contractor to commence work. Prior to or immediately following the pre-construction meeting, the CIPM shall coordinate placement of changeable message boards and/or project signs announcing the construction start and end times at least 5 days prior to actual construction start. The CIPM shall also schedule a photo/video inventory with the contractor prior to construction start in order to document existing conditions on the site. The contractor shall complete the inventory with the CIPM present and provide a final copy to the CIPM to keep in the project files.

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#### 6.1.4 CONTRACTOR-PROVIDED TASKS

When the detailed construction tasks and schedule are received from the contractor, the CIPM shall review and approve the proposed construction schedule. The CIPM shall then upload the schedule to the online system, inserting the construction plan into the overall project plan within the appropriate line items inside the construction phase. The contractor will then need to be provided access to the online system so they can report on their progress, identify issues and risks, and submit change requests.

During the course of the project, the CIPM must conduct daily on-site observations of the work and document the daily activities of the contractor. The Construction Sr. PM shall periodically review the on-site observations with the CIPM as well as their daily log. The duties and responsibilities of the CIPM in the oversight of the contractor are as follows:

- a. The CIPM must become thoroughly familiar with the project plans and specifications prior to construction start. The CIPM must recognize immediately if the work conforms to the requirements of the contract documents.
- b. If any material or portion of the work does not conform to the requirements the CIPM must notify the contractor with an explanation as to why. The CIPM must note these instances in their daily log. Should the contractor ignore the notice and continue working, the CIPM must notify the Construction Sr. PM. A stop order or other disciplinary action may be needed.
- c. The CIPM must be familiar with the construction schedule, know how the work being performed fits into the overall schedule, and complete online system updates per the PMM. The CIPM must make every effort to keep the project on schedule and perform all duties in a manner that promotes progress of the work.
- d. The CIPM is responsible for the administration of the construction contract. Requests for payment must be carefully and promptly reviewed by the CIPM then submitted for processing through the Public Works and Finance Departments. The CIPM must keep all project financial records in order and assure an accurate and complete project file.
- e. The CIPM must avoid activities that could be construed as a responsibility of the contractor.
- f. When the CIPM is overseeing critical components of the project construction, they must observe it as long as the work is proceeding or see to it that another CIPM is present if it is necessary to leave. This applies particularly to work that requires certain procedures for quality assurance such as paving, installation/connection of piping, placing reinforcement or concrete, driving piles, and installing equipment.
- g. The CIPM must maintain and complete a daily log of all construction inspection. The log should include a recording of the day's activities, work accomplished by the contractor, any instructions or judgments given to the contractor, and most importantly, any decisions or agreements made with the contractor.
- h. Whenever possible, problems should be anticipated in advance of their occurrence. It is incumbent upon the CIPM to point out these anticipated problems to the contractor, note them in their log, and note them to the Construction Sr. PM. Advance notice contributes to maintaining the progress of the work.
- i. The CIPM must be safety minded, but the responsibility for job site safety is solely the responsibility of the contractor. If a dangerous condition happens to be observed, it should be reported to the contractor, the Construction Sr. PM, and noted in their daily log.
- j. The CIPM has a responsibility to be alert and observant and to report to the Construction Sr. PM on situations that may cause risks to the costs or completion of the project.
- k. The CIPM must be professional and courteous in their demeanor and communication, **this is of utmost importance with residents**. Instructions are to be given to the contractor's superintendent or foreman, not to the workmen or subcontractors.

- I. Inspections and tests should be promptly made and timely reported as follows:
- i. The CIPM must be present for all on-site testing. Testing results that indicate failure should immediately be relayed to the contractor to address the situation to the satisfaction of the CIPM.
  - ii. Materials should be checked by the CIPM as soon after delivery as possible. An CIPM who rejects material after it has been placed is not working in the best interest of the project or the City.
  - iii. Preparatory work should be promptly checked to minimize delay and subsequent operations.
  - iv. Work should be inspected as it progresses. Delaying any inspections until component work is 100% complete delays progress and the construction schedule.
  - v. The CIPM has the responsibility to be available, provide prompt inspection, and make a majority of field decisions without the Construction Sr. PM or design consultant. However, on occasion, the CIPM should seek advice from these resources if they are uncomfortable with making a final decision.
  - vi. Hasty decisions should be avoided. The CIPM should thoroughly investigate the situation and its possible risks or consequences.
  - vii. The CIPM should be confident to stand behind any decision made.
  - viii. The CIPM should be capable of differentiating between essential and non-essential items.
  - ix. The CIPM must not direct the Contractor's work or require the Contractor to furnish more than that required by the project plans and specifications.

The contractor shall report on the progress of construction no less than weekly to the CIPM. In this the contractor shall review the scheduled tasks in the online system and report those that have been completed, or are underway by percentage complete. Delayed tasks shall also be identified, but the cause of delay shall be noted to the CIPM by the contractor so that the CIPM may note it in the project schedule. If the contractor believes delayed tasks will impact the overall construction schedule, they may submit a schedule change request to the CIPM via "Changes" in the online system.

Progress payments may be submitted by the contractor and processed by the CIPM according to the project specifications. The contractor shall use the online system to submit change requests to the CIPM for construction cost changes as well. After the change request is resolved between the contractor and the CIPM, the request may simply be dissolved or it may result in a change order. The CIPM shall process change orders as follows:

1. Change orders are formal amendments to the contract and are to be processed for both pay and non-pay items. Non-pay items typically represent scope changes such as contract time extensions (note: these are different than construction schedule changes), shifting of alignments, relocation of planned quantities, modification of traffic control plans, etc.
2. Change orders shall be prepared by the CIPM on PMM Standard 9.18 CHANGE ORDER FORM and any applicable funding agency forms (such as MoDOT). The Construction Sr. PM

shall review all change orders to determine if the proposed work should be considered fully or partially within the original contract agreement and relay his determination to the City Engineer. Change orders shall be processed according to procurement laws in Section 145 of the City's Code.

3. Change orders are used to legally define and compensate contractors for deviations from the contract documents. For the purposes of the PMM, substantial changes in construction work are work items beyond the original scope of the project. Substantial changes are work items not addressed by the plans and specifications and typically where no unit price was established at bidding. Except in the case of emergencies or where authorization has been granted by the Construction Sr. PM and City Engineer, no work shall be performed prior to approval of the change order for substantial changes.
4. For unsubstantial changes, the CIPM may resolve to "trade" quantities for additional work performed in lieu of other work deleted in order to avoid delay in project progress. The Contractor and CIPM must document unsubstantial changes using the online system and must execute a formal change order before substantial completion of construction can be granted.
5. Price and time considerations for lump-sum changes must be negotiated with the contractor by the CIPM using relevant comparisons of means, methods, and costs. If an acceptable negotiation cannot be reached, the CIPM may choose to have the work completed by "Force-Account" (a time and material basis). The CIPM shall use negotiated rates and production estimates (these must also be verified by relevant comparisons) provided by the contractor and process an estimated change order for the total Force-Account work. Lump-sum changes, and especially those requiring Force Account work, are typically considered a substantial change. Except in the case of emergencies or where authorization has been granted by the Construction Sr. PM and City Engineer, no work shall be performed prior to approval of the change order. The CIPM must maintain detailed records, invoices, and other documentation to justify the total amount of the final change order which shall be processed when the Force-Account work is completed.
6. Change orders may be necessitated by field conditions, requests by the City, requests by the Contractor, or other project constraints. Requests from any party to the contract agreement shall be processed according to the Construction Specifications.

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#### 6.1.5 SUBSTANTIAL COMPLETION

The project specifications will identify the definitions of substantial and final completions. For example, roadway projects may be considered substantially complete when there are no longer permanent roadway closures impeding traffic flow, storm drainage projects may be considered substantially complete when there are no longer construction activities impeding the flow of water, etc. When the contractor believes they have achieved substantial completion, the CIPM will conduct a Pre-Final project inspection. The Pre-Final Inspection Deficiency List shall identify deficiencies needed for substantial completion separately from remaining deficiencies on the project. After the contractor has addressed the outstanding deficiencies for substantial completion, the CIPM and Construction Sr. PM shall reinspect the project. Only the Construction Sr. PM may issue letters for substantial completion and shall use PMM Standard 9.14.9 SUBSTANTIAL COMPLETION.

Retainage is specifically dealt with in this manual for the purpose of documenting the process and use of retainage on Public Works projects. Retainage shall be administered according to Missouri Revised Statutes Section 34.057 using the following process as may be allowed by state law:

- Retainage is required on all projects and subtracted from each progress payment. The City will retain ten percent (10%) of the amount of each progress payment, not to exceed five percent (5%) of the total contract value, until final completion and acceptance of all construction.
- At the time the total retainage reaches five percent (5%) of the total contract value, the CIPM shall review the construction progress with the Construction Sr. PM. The following Retainage Clearances shall be required for the discontinuation of withholding retainage from progress payments:
  - a. No liquidated damages
  - b. Satisfactory progression of the work and general compliance with the construction schedule
  - c. Defective construction work or material has been remedied
  - d. Disputed work has been resolved
  - e. No failures to comply with any material provision of the contract
  - f. No third party claims filed or reasonable evidence that a claim will be filed
  - g. No failures or indications of failures of the contractor to make timely payments for labor, equipment, or materials
  - h. No damages to a subcontractor or material supplier
  - i. Compliance with the contract wage rate provisions
  - j. No citations from the enforcing authorities for acts of the contractor or subcontractor not complying with any material provisions of the contract which result in a violation of any federal, state, or local law regulation or ordinance applicable to the project causing additional costs or damages to the owner

If all of the Retainage Clearances have been met or, in the opinion of the Construction Sr. PM, will likely be met, retainage can be discontinued from progress payments.

- At the time of final payment, these Retainage Clearances shall again be reviewed by the CIPM and the Construction Sr. PM. If all of the Retainage Clearances are still applicable or, in the opinion of the Construction Sr. PM, are not likely to occur, the retainage can be released entirely.

## 6.2 CONSTRUCTION PHASE MANAGEMENT

### 6.2.1 SCOPE MANAGEMENT

Tasks	Procedures	End Product
Construction Contract Documents	<p>Contractor to provide completed forms from Contract Specifications (City of St. Charles Boilerplate Standards and other requirements)</p> <p>CIPM to review all contract documents and provide one copy each to Legal Dept. and City Clerks Dept.</p>	<p>Copies of submitted bid and addenda</p> <p>Completed copies of necessary project procurement standard forms (EOE, E-Verify, DBE, etc.)</p> <p>Executed Contracts</p> <p>Performance and Payment Bonds</p> <p>Approved Insurance Certificates</p>
Materials Testing/ Shop Drawings/ Survey Staking	<p>CIPM to secure project specific materials testing contracts if needed, otherwise use blanket contract</p> <p>CIPM and Construction Sr. PM to review and approve shop drawings</p> <p>Contractor's surveyor to schedule and execute construction staking, though pre-staking may be needed by City's surveyor for utilities or other needs</p>	<p>Secured materials testing services</p> <p>Approved shop drawings</p> <p>Completed pre-construction and construction survey staking</p>
Pre-Construction Meeting	<p>CIPM to notify contractor to supply construction task list (WBS) and schedule at meeting</p> <p>Provide additional copies of Final Plans and Specifications at meeting</p> <p>Use <u>PMM Standard 9.16 PRECONSTRUCTION MEETING AGENDA</u> to run meeting</p>	<p>Pre-construction meeting agenda</p> <p>Pre-construction meeting minutes and action items</p>
Contractor-Provided Tasks	<p>CIPM to insert contractor-provided tasks and schedule in the online system</p> <p>CIPM to carefully review plans and specifications in advance of actual execution of individual tasks in order to anticipate problems and conflicts before scope or progress is affected</p> <p>CIPM to monitor work with daily log</p> <p>CIPM or Contractor to submit and process change requests as soon as issues are detected through online system</p> <p>CIPM to conduct construction progress meetings as needed</p>	<p>CIPM's daily construction log</p> <p>CIPM's daily quantity log</p> <p>Construction progress meeting minutes/summaries</p> <p>Completed construction tasks</p>

<b>Substantial Completion</b>	<p>Pre-Final inspection occurs, items impacting substantial completion must be corrected prior to achievement</p> <p>Substantial completion letter is generated by CIPM along with deficiency list, then reviewed and signed by Construction Sr. PM</p>	<p>Pre-Final Inspection Deficiency List</p> <p>Substantial completion letter</p>
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## 6.2.2 QUALITY MANAGEMENT

Tasks	Procedures	End Product
<b>Construction Contract Documents</b>	<p>Contractor to provide completed forms from Contract Specifications (City of St. Charles Boilerplate Standards and other requirements)</p> <p>CIPM to review all contract documents and provide one copy each to Legal Dept. and City Clerks Dept.</p>	Distributed copies of fully executed construction contract documents
<b>Materials Testing/ Shop Drawings/ Survey Staking</b>	<p>Select experienced firms with documented QA/QC processes for materials testing contracts</p> <p>CIPM and Construction Sr. PM to carefully review shop drawings for engineering design and compliance with project plans and specifications – require professional engineer seals or use in-house or consulted professional reviews when needed</p> <p>CIPM to review cut sheets from survey staking</p>	<p>Secured materials testing services</p> <p>Approved shop drawings</p> <p>Accepted cut sheets</p>
<b>Pre-Construction Meeting</b>	CIPM to make certain all appropriate stakeholders and agencies are present at the pre-construction meeting	Pre-construction meeting minutes and action items
<b>Contractor-Provided Tasks</b>	<p>Project plans and specifications have gone through rigorous QA/QC process</p> <p>Use ongoing materials testing as required in the project specifications</p> <p>CIPM to conduct and document construction inspections according to the PMM</p>	<p>Copies of approved Final PS&amp;E</p> <p>Materials testing results on file</p> <p>CIPM's completed daily log</p> <p>Added issues or risks through online system that impact project quality</p> <p>Documented field changes</p>
<b>Substantial</b>	Use <u>PMM Standard 9.14.9 SUBSTANTIAL COMPLETION</u> Letter	Substantial completion letter



<b>Completion</b>	to document achievement and list outstanding items	
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### 6.2.3 TIME MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Product</b>
<b>Construction Contract Documents</b>	CIPM to plan sufficient time in schedule for collection of contract documents and final signatures	Milestone for fully executed construction contract documents
<b>Materials Testing/ Shop Drawings/ Survey Staking</b>	CIPM to begin securing project specific materials testing contracts (if needed) at the time of project bidding  CIPM to determine need for pre-staking and coordinate execution during bidding process	Milestone for materials testing contract approval (I/A)  Milestone for shop drawing approval  Milestone for survey staking completion
<b>Pre-Construction Meeting</b>	CIPM to notify contractor to supply construction task list (WBS) and schedule at meeting  CIPM to issue Notice to Proceed (NTP) using PMM Standard 9.14.8 <u>NOTICE-TO-PROCEED (CONTRACTOR)</u>	Milestone for schedule pre-construction meeting  Milestone for Construction NTP
<b>Contractor-Provided Tasks</b>	CIPM to insert contractor-provided tasks and schedule in the online system and establish milestones  Create baseline schedule of online system with pdf and mpp files at the beginning of construction  Contractor to report on construction progress at least weekly and CIPM to update online system accordingly  Carefully review plans and specifications in advance of actual execution of individual tasks in order to anticipate problems and conflicts before scope or progress is affected.  Document issues or risks through the online system  Submit and process change requests as soon as issues are detected through online system  Conduct construction progress meetings as needed	Baseline pdf and mpp files in project schedule folder prior to construction start  Milestones for significant construction completion events (demolitions/removals, utility work, mass grading, storm sewers, paving, signals, etc.)

<b>Substantial Completion</b>	Complete Pre-Final inspection within 3 days of substantial completion request from contractor	Issuance of Pre-Final Inspection deficiency list
<b>All Tasks</b>	Continually monitor progress through the online system	Added issues and risks online that may impact project schedule  Ongoing construction schedule updates through online system

#### 6.2.4 COST MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Product</b>
<b>Construction Contract Documents</b>	CIPM to create payment summary at initial execution of contract documents  CIPM to obtain copy of the executed PO and have placed in the project file	Initial payment summary sheet  File copy of the executed PO
<b>Materials Testing/ Shop Drawings/ Survey Staking</b>	CIPM to check shop drawing quantities and details against specification line items  CIPM to review cut sheets and item lengths after initial survey staking  CIPM to update project estimates for final construction contract costs, final utility relocation costs, in-house costs, testing/staking services and other final estimated costs	Approved shop drawings  Verified survey staking information  Updated project estimates
<b>Pre-Construction Meeting</b>	Potential scope changes to the contract to be discussed at the pre-construction meeting	Preconstruction meeting minutes and action items
<b>Contractor-Provided Tasks</b>	CIPM to conduct construction inspections according to the PMM  CIPM or Contractor to document issues or risks through the online system  CIPM or Contractor to submit and process change requests as soon as issues are detected through online system  Contractor to use <u>PMM Standard 9.17 CONSTRUCTION PAYMENT</u> for processing of pay requests  CIPM to maintain retainage according to PMM	Processed pay requests  CIPM's daily quantity log  Added issues or risks through online system that may impact costs  Added change requests through online system  Processed change orders as needed

	CIPM to process project change orders using <u>PMM Standard 9.18 CHANGE ORDER FORM</u>	
<b>Substantial Completion</b>	Use <u>PMM Standard 9.14.9 SUBSTANTIAL COMPLETION</u> Letter to document achievement and list outstanding items	Substantial completion letter

#### 6.2.5 RISK MANAGEMENT

Tasks	Procedures	End Product
<b>Construction Contract Documents</b>	CIPM to provide City Legal Dept. a copy of all construction contract documents for review and approval	Distributed copies of fully executed construction contract documents
<b>Materials Testing/ Shop Drawings/ Survey Staking</b>	CIPM to review and document materials testing reports as they are received  CIPM to review cut sheets after survey staking is completed	Accepted testing reports  Accepted cut sheets
<b>Pre-Construction Meeting</b>	Contractor to conduct preconstruction photo/video inventory immediately following meeting – CIPM to maintain a copy in project files	Preconstruction photo/video inventory
<b>Contractor-Provided Tasks</b>	CIPM to document all project decisions made in their daily log  Certified payroll collected with every pay request – random wage interviews as needed	CIPM's completed daily log  Copies of contractor's certified payrolls and wage interview notes
<b>Substantial Completion</b>	CIPM to verify retainage clearances prior to issuing substantial completion letter  Use <u>PMM Standard 9.14.9 SUBSTANTIAL COMPLETION</u> Letter to document achievement and list outstanding items	Approved retainage clearances  Substantial completion letter

#### 6.2.6 COMMUNICATIONS MANAGEMENT

Tasks	Procedures	End Product
<b>Construction Contract Documents</b>	Construction Sr. PM to coordinate media release about project with City's Media Dept. upon final execution of the contract documents  Coordinate ground-breaking	Media Release  Scheduled Ground-Breaking Ceremony (I/A)

	ceremony if identified as part of the Communication Plan	
<b>Materials Testing/ Shop Drawings/ Survey Staking</b>	Distribute testing, shop drawings, and staking information according to the project Communication Plan	Distributed copies of appropriate information
<b>Pre-Construction Meeting</b>	Coordinate placement of changeable message boards and/or project signs announcing construction start and end times at least 5 days prior to actual construction start  Contractor to distribute City standard door hangers to all residents within 150 feet of the project limits	Changeable message boards and/or project signs in place  Distributed door hangers
<b>Contractor-Provided Tasks</b>	Distribute information throughout construction according to the Communication Plan  Provide construction updates to the City's website and other venues according to the project Communication Plan	Ground-Breaking Ceremony (I/A)  Distributed copies of appropriate construction documentation  Regular project construction updates
<b>Substantial Completion</b>	Construction Sr. PM to distribute copy of substantial completion letter as well as a media release announcing substantial completion according to the project Communication Plan	Distributed copies of substantial completion letter  Media release about project substantial completion (I/A)

## 7 CLOSEOUT PHASE

### 7.1 CLOSEOUT PHASE PRIMARY TASKS

#### 7.1.1 FINAL COMPLETION

The Pre-Final Inspection deficiency list identifies both items needed for substantial completion and final completion. Once substantial completion has been granted, the contractor should begin immediately working to complete all remaining deficiencies for final completion. This work typically ends with the final restoration of the site which may include a maintenance period identified in the project specifications. The contractor shall submit a request for Final Inspection to the CIPM. At a minimum, the CIPM and the Construction Sr. PM shall be present for the Final Inspection; however, the CIPM should be sure to include any outside permitting or funding agencies that may need to be present as well. The Final Inspection should encompass each individual item of the project as well as the overall project. Projects involving specialized equipment and/or controls such as traffic signals, pump stations, etc., should include an operational test of these specialized systems. The CIPM may wish to include the measurement of final installed quantities with the Final Inspection or coordinate a separate time for these measurements

with the contractor. Upon completion of the Final Inspection, the CIPM shall issue the contractor a final deficiency list.

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## 7.1.2 FINAL SUBMITTALS

Before final payment can be issued, a number of final documents must be submitted by the contractor to the CIPM. These are identified in the construction contract.

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### 7.1.2.1 AS-BUILT PLANS

As-built plans shall be provided by the contractor as required in the project specifications. If as-built plans were omitted from the specifications, the CIPM shall verify with the Construction Sr. PM if it is necessary to complete the as-built plans, either with Engineering Division staff or a contracted surveyor. The CIPM and GIS Technician shall be responsible for reviewing and verifying the as-built plans upon receipt. The GIS Technician is responsible for updating the City's GIS and Enterprise Asset Management System (EAMS) upon conclusion of the review.

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### 7.1.2.2 WARRANTIES AND MANUALS

Most project specifications include a set warranty period for the overall project. However, specific materials or equipment may come with a supplier or manufacturer warranty that is to be provided to the City. In addition to warranties, equipment may have an operational manual that needs to be held on file in Public Works and transferred to the operational division that will ultimately be responsible for the equipment. The CIPM is responsible for collecting any warranties and manuals from the contractor. When these are received, the CIPM must verify that model and serial numbers of the documentation matches those items installed prior to final payment. The CIPM must supply copies of all manuals and warranties to the GIS Technician who will then update the City's EAMS.

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### 7.1.2.3 CERTIFICATIONS AND LIEN WAIVERS

Any required final certifications and lien waivers must be collected from the contractor prior to final payment. These items demonstrate the contractor has met legal obligations required by the contract and they have paid their suppliers and sub-contractors. Receiving copies of these documents lowers the risk of claims against the City due to unfulfilled obligations of the contractor. These documents may include:

- Final wage rate certifications
- Affirmative action certifications
- DBE participation certifications
- Union associated certifications
- Security certifications (along with copies of any keys and keying schedule)
- Sub-contractor's verifications of payments (lien waivers)
- Material and equipment supplier's verifications of payments (lien waivers)

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### 7.1.3 FINAL PAYMENT

Upon verification that the Final Inspection deficiency list has been satisfactorily addressed and all final submittals have been received and accepted by the CIPM and the Construction Sr. PM, the CIPM may process the final payment. This process is initiated by the receipt of the final invoice from the contractor. A change order may be needed to adjust the final quantities so the CIPM should be sure to process this change order as soon as all installed quantities have been measured to delay the issuance of final payment. Retainage can be released entirely with the final payment as long as the retainage clearances identified in PMM Section 6.1.5 SUBSTANTIAL COMPLETION have been satisfied. With issuance of the Final Payment, the City Engineer will issue a letter of Final Acceptance for the project.

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### 7.1.4 LONG-TERM OPERATIONS AND MAINTENANCE PLAN

With the completion of a capital project, the City has made a significant investment in its infrastructure. Any details regarding the long-term operation, maintenance, and/or care of the project must be documented for the operational divisions of Public Works. This is accomplished by the GIS Technician promptly and accurately reflecting new infrastructure information in the City's EAMS upon receipt of all closeout documents from the CIPM. The GIS Technician shall notify the Assistant Director of Public Works and Operating Division Head responsible for the ongoing maintenance of the infrastructure and advise construction is complete and they are to set the long-term operations and maintenance plan within the EAMS.

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#### 7.1.4.1 DOCUMENT REVIEW

The CIPM shall arrange to have all documents reviewed with the respective operating division(s) of Public Works, the Asst. Public Works Director, and the City Engineer. After having a chance to review the project documentation, the operating division should verify with the Asst. Public Works Director that they understand the needs and responsibilities for long-term operation and maintenance of the project.

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#### 7.1.4.2 RESPONSIBILITIES LISTING

A memorandum will be prepared by the City Engineer that outlines the responsibilities for long-term operation and maintenance of the project, identifies the location of reference manuals and materials that specify procedures, and the frequency with which activities should be performed. This information will be transferred to the Asst. Director of Public Works who will review it and coordinate needed modifications with the City Engineer. The Asst. Director of Public Works will then begin implementation of the responsibilities with the respective operation division(s). Copies of the final memorandum will be distributed to the Director of Public Works, the Design Sr. PM and the Construction Sr. PM for implementation of any other responsibilities.

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#### 7.1.4.3 ASSET MANAGEMENT UPDATES

With the completion of a capital project, the state of some portion of infrastructure has changed or new infrastructure has been added. As a result, updates must be completed of the City's Geographic Information System (GIS) and Enterprise Asset Management System (EAMS). With the issuance of the responsibilities list, the Design Sr. PM shall assign the GIS Technician to perform the necessary updates to GIS and EAMS in order to incorporate the completed project. Information included within the system updates may include:

- PDFs of Final PS&E
- PDFs of executed right-of-way documents
- Records of field modifications to engineering design
- As-built drawing information
- Maintenance and operational procedures
- Responsibility designations (should include private ownership responsibilities)
- Construction photos or scans of related documents

### 7.1.5 FILE REVIEW AND CLOSEOUT

The final task of any project is the formal closeout of the project. The PM and CIPM are mutually responsible for assuring that the project files are complete and contain copies of all information required by PMM Standard 9.12 DEFAULT FILE SET-UPS. In order to facilitate this process the PMM Standard 9.19 CLOSEOUT FORM is provided for the PM and CIPM to complete their respective sections. The PM shall complete the design section while the CIPM is responsible for the construction section. When the form is completed, items shall be verified by the Design Sr. PM and the Construction Sr. PM. After final signature of the City Engineer, the project is ready to be archived.

## 7.2 CLOSEOUT PHASE MANAGEMENT

### 7.2.1 SCOPE MANAGEMENT

Tasks	Procedures	End Product
All Tasks	Follow PMM Section 7 <u>CLOSEOUT PHASE</u> for project closeout	Final Inspection Deficiency List  Issuance of Final Payment and Final Acceptance Letter  Long-Term Maintenance and Operation Responsibilities Memorandum  GIS and EAMS Updates  Completed Final Closeout Form

### 7.2.2 QUALITY MANAGEMENT

Tasks	Procedures	End Product
Final Completion	Perform thorough Final Inspection of all individual project components	Final Inspection Deficiency List
Final Submittals	Check submittals against project specifications and PMM	Reviews of final submittals

<b>Final Payment</b>	Process final change order for final measured quantities	Approved final change order Issuance of Final Payment and Final Acceptance Letter
<b>Long-Term Operations and Maintenance Plan</b>	Complete thorough update of GIS and EAMS with all applicable information for ease of access for operational division(s)	Project information incorporated into GIS and EAMS Updates
<b>File Review and Closeout</b>	Use <u>PMM Standard 9.19 CLOSEOUT FORM</u>	Completed Final Closeout Form

### 7.2.3 TIME MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Product</b>
<b>Final Completion</b>	Contractor supplied schedule should include sufficient time for inspections, corrections of deficiencies, and final submittals  Identify time frame for completion with Final Inspection Deficiency List	Milestone for completion of Final Inspection Deficiency List
<b>Final Submittals</b>	Identify required final submittals from the project specifications and the PMM with Final Deficiency List	Milestone for final submittals
<b>Final Payment</b>	Process final change order adjusting all quantities as soon as the Final Inspection is completed	Milestone for Final Payment
<b>Long-Term Operations and Maintenance Plan</b>	Organize review meeting with operational divisions	Milestone for operational division(s) review meeting
<b>File Review and Closeout</b>	Identify time frame for completion of closeout form in project schedule	Summary task for project closeout
<b>All Tasks</b>	Set milestones for final closeout tasks to prevent the project from being unnecessarily prolonged	Online system updates

### 7.2.4 COST MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Product</b>
<b>Final Completion</b>	Measure final quantities with contractor	Field notes of final measured quantities
<b>Final Submittals</b>	Collect all submittals required by the project specifications and the PMM	Completed final submittals



<b>Final Payment</b>	Assure final payment package reflects all change orders and quantities  Complete outside funding reimbursement submittals as soon as possible after final payment issuance	Approved final change order  Issuance of Final Payment and Final Acceptance Letter  Outside funding reimbursement requests
<b>Long-Term Operations and Maintenance Plan</b>	Consider level of effort or additional operational costs that may be incurred during review of plan  Include projected operational costs within EAMS  Plan purchases of any needed or specialized equipment with operational division(s)	GIS and EAMS Updates  Identified updates to annual operational budget(s) request(s)
<b>File Review and Closeout</b>	Include copies of all project cost estimates, executed contracts, and pay requests in project file	Completed Final Closeout Form

#### 7.2.5 RISK MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Product</b>
<b>Final Completion</b>	Perform thorough Final Inspection of all individual project components	Final Inspection Deficiency List
<b>Final Submittals</b>	Assure collection and validity of all certifications and lien waivers	Reviews of final submittals
<b>Final Payment</b>	Issue Final Payment and Acceptance only upon completion and receipt of all items	Issuance of Final Payment and Final Acceptance Letter
<b>Long-Term Operations and Maintenance Plan</b>	Involve respective operational division(s) in review of documents  Incorporate project improvements within EAMS long-range planning	Long-Term Maintenance and Operation Responsibilities Memorandum  GIS and EAMS Updates
<b>File Review and Closeout</b>	Use <u>PMM Standard 9.19 CLOSEOUT FORM</u>	Completed Final Closeout Form

#### 7.2.6 COMMUNICATIONS MANAGEMENT

<b>Tasks</b>	<b>Procedures</b>	<b>End Product</b>
<b>All Tasks</b>	Review project Communication Plan for desired Ribbon-Cutting Ceremony  Follow <u>PMM Section 7 CLOSEOUT</u>	Final Inspection Deficiency List  Issuance of Final Payment and Final Acceptance Letter

	<u>PHASE</u> for project closeout	Ribbon-Cutting Ceremony (I/A)  Long-Term Maintenance and Operation Responsibilities Memorandum  GIS and EAMS Updates  Completed Final Closeout Form
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## 8 VARIABLE PROJECT PHASES

### 8.1 PERMITTING

Permitting requirements vary significantly between Public Works projects depending on the type and impacts of the project and in many cases may not even be necessary. Therefore, the permitting phase is only generally outlined in this manual, but the significance it has on the progress of a project cannot be ignored. Neglect of permitting impacts to a project plan may cause scope changes, schedule delays, introduce new quality standards, require specific communications, and almost certainly increase costs. It is the responsibility of the PM/Consultant to incorporate the appropriate permitting tasks and their dependencies (links) with other project tasks during the project planning phase. Consultant contracts should identify sufficient scope and cost for necessary regulatory agency coordination and permitting. Planning for the appropriate permitting tasks early in the project planning can pay important dividends during the project life-cycle. Broadly, the permitting process should include:

1. Initiation Phase Agency Feedback – During the early brainstorming of a project, and especially during project studies, regulatory agencies such as the Missouri Dept. of Natural Resources, Dept. of Conservation, Dept. of Transportation, the U.S. Army Corps of Engineers, and others, should be contacted for potential impacts the project may have on systems under their jurisdiction and to identify any needed regulatory permits.
2. Design Phase Agency Feedback – Once a project design has been started, regulatory agencies should be contacted again to be advised of the intent and nature of the project along with requests for any needed permit applications. The PM or consultant should consider having meeting with individual agencies to review concept plans or alternatives analyses.
3. Permit Applications – Eventually permit applications must be completed when permits are necessary for the project. The preparation of permit applications and necessary supporting plans or documentation should be identified within the project scope and schedule. Typical regulatory agencies requiring permit applications include:
  - a. U.S. Army Corps of Engineers (USACOE) – 404s, Levees
  - b. Missouri Department of Natural Resources (MDNR) – Water, Sewer, Land Disturbance, Katy Trail, 401s, SHPO Section 106s
  - c. National Park Service (NPS) – Section 4(f)s and 6(f)s for transportation

- d. Missouri Department of Transportation (MoDOT) – State Right-of-way
- e. Missouri Department of Conservation (MDOC) – Impact Permits (also connected to U.S. Fish and Wildlife)
- f. City of St. Charles – Floodplain Development, Building
- g. St. Charles County – Special Use

## 8.2 PUBLIC ENGAGEMENT

Similarly to the permitting phase, the level of and need for public engagement varies significantly among projects. Some projects require high levels of public engagement with multiple opportunities and activities throughout its duration while others are relatively innocuous needing only standard methods of communication. Regardless, the failure to consider public engagement can be detrimental to the success of a project.

It is important for the PM to plan the public engagement process with the Design Sr. PM, City Engineer, Director of Public Works, the design consultant, and possibly the City's Media Dept. during the project planning phase. The final plan for public engagement needs to be well documented within the project Communications Plan. In general, the following sub-tasks should be considered as part of the Communications Plan to address public engagement:

- Initiation phase stakeholder input
- Alternatives selection presentation or mailer
- Web updates
- Progress reports
- First open-house with preliminary plans
- Special stakeholder meetings
- Individual property owner meetings
- Second open-house with right-of-way/final plans
- Media Release(s)
- Groundbreaking ceremonies
- Changeable message boards prior to construction
- Door hangers by contractor
- Construction updates
- Ribbon-cutting ceremonies

## 8.3 OUTSIDE FUNDING

Outside funding is an important element for any project. Outside funding allows the City to reduce the amount of capital funding from its own revenue sources for a particular project allowing additional projects to be completed at a greater benefit for the tax-payers of St. Charles. Typically, outside funding is in the form of Federal, State, or Local grants; however, it may also be provided by a low-interest loan or a special assessment district. Though the source may vary, outside funding invariably comes with certain rules that must be followed for its use. The core principals of most funding programs are accountability and transparency. In other words, funding agencies want to know that the funding has been used appropriately, within the guidelines and expressed intent of the funds, and that the use of the funds is easy to track.

Because every project will not have outside funding and due to the wide variety of sources and their associated requirements, the tasks and management efforts must be identified on a project specific basis. When a project includes outside funding, the PM must carefully review the requirements of that funding and incorporate the necessary scope to administer the funding into the project planning and execution. Outside funding requirements should clearly be identified in consultant contracts and consideration within the project scope and schedule must be given. In many cases, outside funding will affect the requirements of several other project phases including design, right-of-way, and construction so dependencies (links) among project tasks are important to identify. The following general tasks are given for the PM to use as a basic outline of tasks to incorporate for the outside funding phase, but the PM must adjust the scope and schedule based on the specific funding requirements:

- Applications to Agency
- City and Agency approvals of agreement and City budget amendment recognizing funding
- Agency consultant contract approval
- Agency review of PS&E(s)
- Revisions and response to agency comments
- Agency right-of-way acquisition authorization
- Agency PS&E(s) approvals
- Agency regulatory permitting approvals
- Agency construction funding obligation
- Agency authorization to bid
- Agency construction contract award concurrence
- Agency on-going construction review and coordination
- Agency final approval
- Agency audit

## 9 STANDARD DOCUMENTS

### 9.1 PROJECT BRIEF

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.1 Project Brief.xls

### 9.2 PROJECT CHARTER/PROJECT MANAGEMENT PLAN

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.2 Project Charter.docm

### 9.3 WORK BREAKDOWN STRUCTURE-SCHEDULE

See [www.projectmanager.com](http://www.projectmanager.com)\ALL\CIP New

### 9.4 COMMUNICATION PLAN

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.4 Communication Plan.xlsx

### 9.5 PREQUALIFICATION FORM

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.5 Prequalification Form.doc

### 9.6 RFQ (REQUEST FOR QUALIFICATIONS)

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.6 RFQ.doc

### 9.7 RFQ RESPONSE SCORING CRITERIA

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.7 RFQ Scoring.xls

### 9.8 PROFESSIONAL SERVICES CONTRACT

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.8 Professional Services Contract.xls

### 9.9 DESIGN KICK-OFF MEETING AGENDA

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.9 Design Kick-Off Agenda.doc

### 9.10 ENGINEERING DESIGN PLAN CHECKLIST

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.10 Engineering Design Plan Checklist.doc

## 9.11 COST ESTIMATE

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.11 Cost Estimate.xls

## 9.12 DEFAULT FILE SET-UPS

### 9.12.1 HARD FILES

Hard files refer to the paper files that will be kept on permanent record for all projects within Public Works. The Missouri Sunshine Law requires that all files pertaining to capital infrastructure projects can never be eliminated. Therefore, it is important hard files related to Capital Projects be complete and well organized.

Engineering Administrative Assistant staff will be responsible for maintaining all hard copy files within Public Works. Project Managers are responsible for designating the documents that are to be filed in each project file by project name, project number, and document type.

Project files shall be arranged into design and construction folders. The folders shall be arranged by color according to the project type as follows:

- Orange – Traffic and Streets (STR) Projects
- Green – Storm Sewer (STM) Projects
- Red – Sanitary Sewer (SAN) Projects
- Blue – Water (WTR) Projects
- Manilla – General or Facilities (FCM) Projects

Project files shall be labeled according to the year the project was started, the project number, and the project name on the side tab of the file folder(s) as follows:

[File Type/Volume] [Full Project Name]	[Full Project Number]
<i>(e.g., Design 1, Construction 2, etc.)  (i.e. Riverview Lift Station Replacement)</i>	<i>(YY---##)  YY = last two digits of the start year  --- = project type (e.g. STR, STM, etc.)  ## = CIP identifying digits</i>

Complete right-of-way files are maintained separately as assigned by the City's Right-of-Way Specialist. Please note that there may be multiple volumes due to project documents exceeding the capacity of one single folder.

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#### 9.12.1.1 DESIGN FILES

DESIGN files shall contain the following sections:

1. Contract Items

Must contain at least the following:

- a. Project Charter and Communication Plan\*
- b. RFQ scoring results\*
- c. Copy of executed contract\*
- d. Copy of insurance certificates for general liability and errors/omissions\*
- e. Copy of the Notice to Proceed\*
- f. Initial Project Schedule at Design Kick-Off\*
- g. Copies of any supplemental agreements (change orders)\*

2. Invoicing-Payments\*

3. Correspondence

4. Correspondence

5. General Project Information

- a. Approved Preliminary Plans and Estimate\*
- b. Public Meeting(s) minutes\*
- c. Approved Final Plans, Specifications, and Estimate (or Study)\*
- d. Completed Final Engineering Design Plan Checklist\*

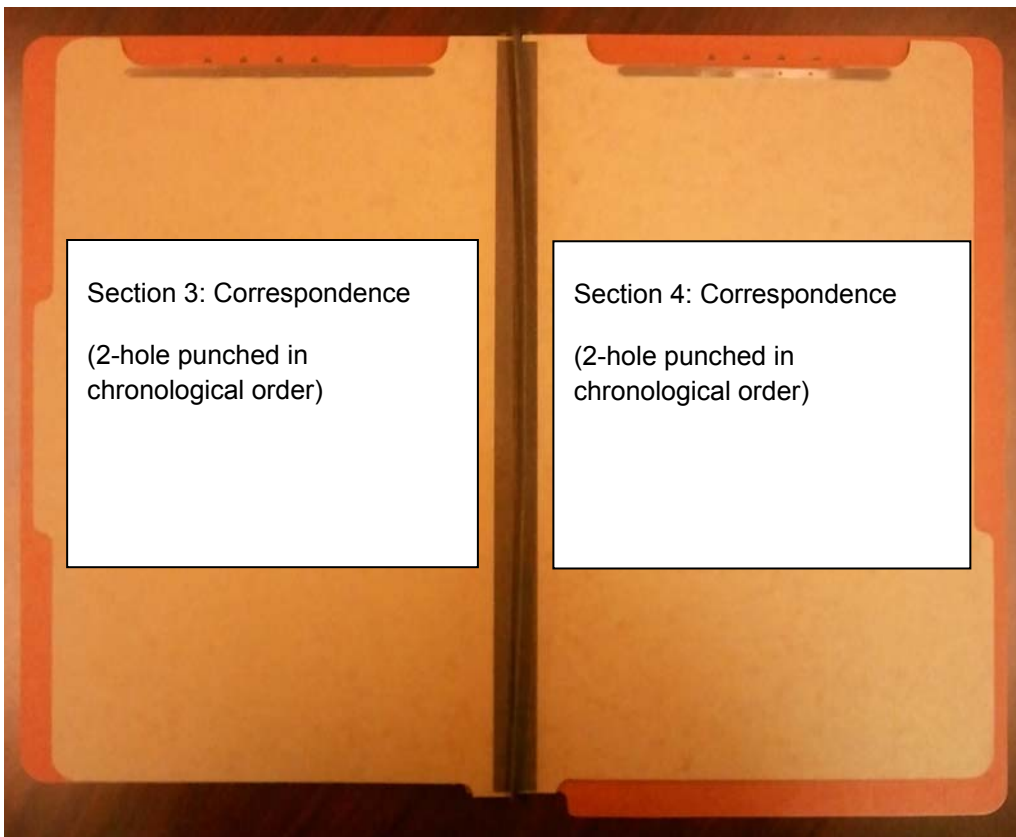
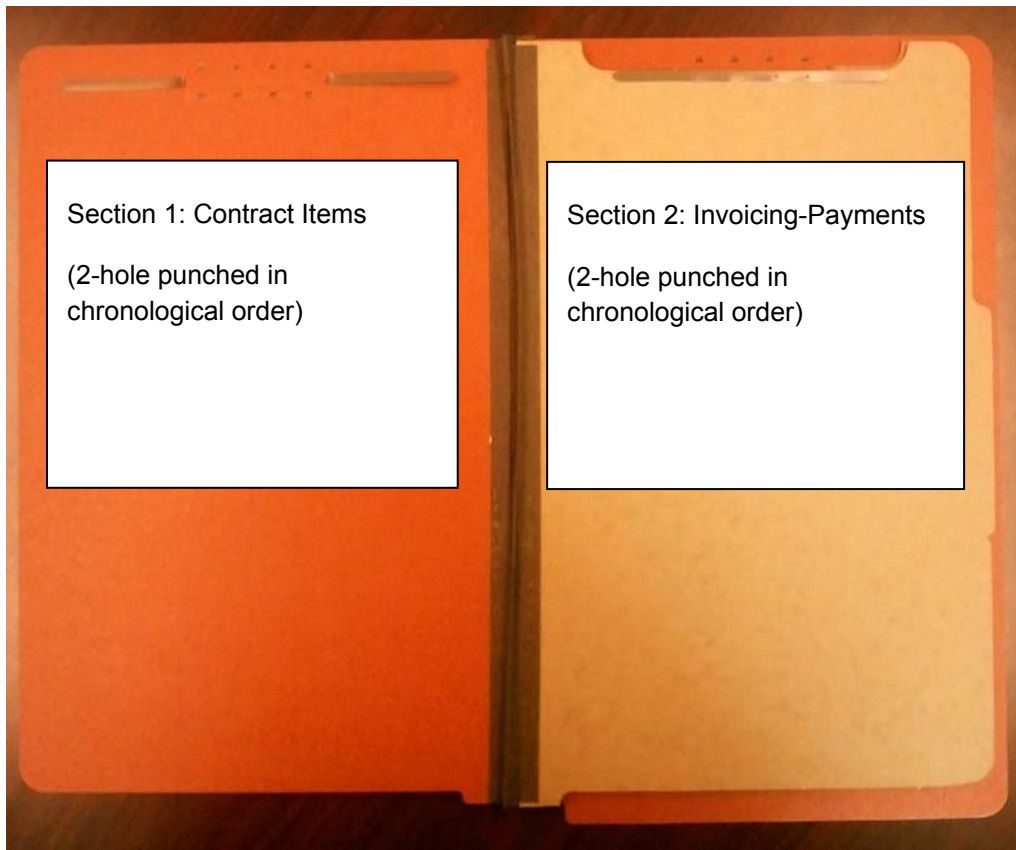
6. Outside Funding

Must contain at least the following:

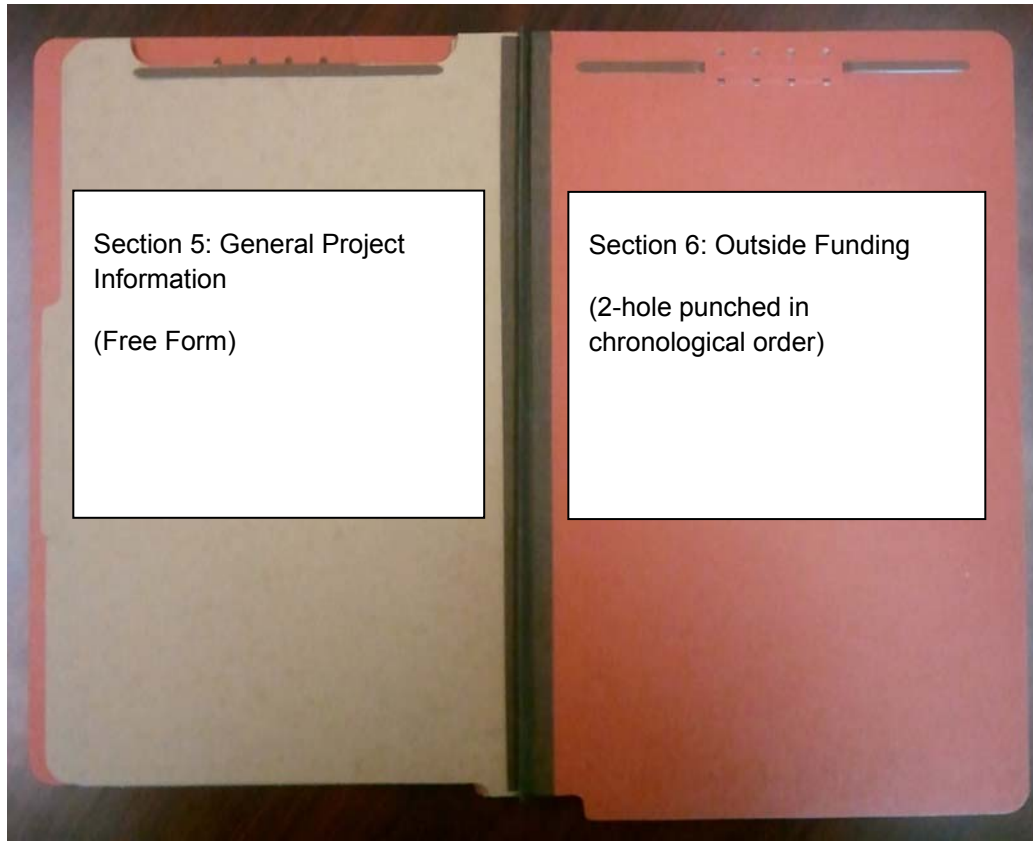
- a. Copies of any funding applications\*
- b. Copies of any executed funding agreements\*
- c. Copies of all requests for reimbursements\*

\* Indicates this item must be included in the file if relevant to the project.

The hard copy project DESIGN file shall be arranged in the following manner:







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#### 9.12.1.2 CONSTRUCTION FILES

CONSTRUCTION files shall contain the following sections:

1. Right-of-ways/Easements

Copies of all recorded right-of-way and/or easement documents\*

2. Permits

Copies of all permit records related to outside agency permitting\*

3. Bid-Contract Items

Must contain at least the following:

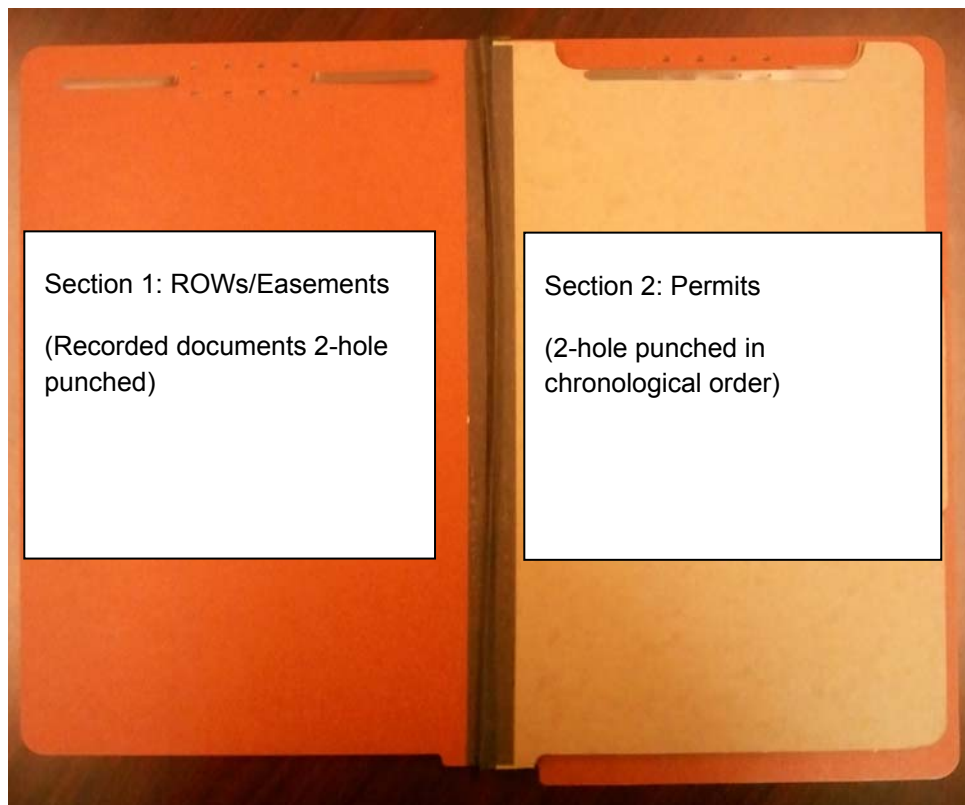
- a. Bids – advertisement, plan holders, bid results, and bid tabulation\*
- b. Copies of all addenda if applicable\*
- c. Bonds – bid, performance, and payment\*
- d. Copy of executed contract\*
- e. Copy of insurance certificates\*

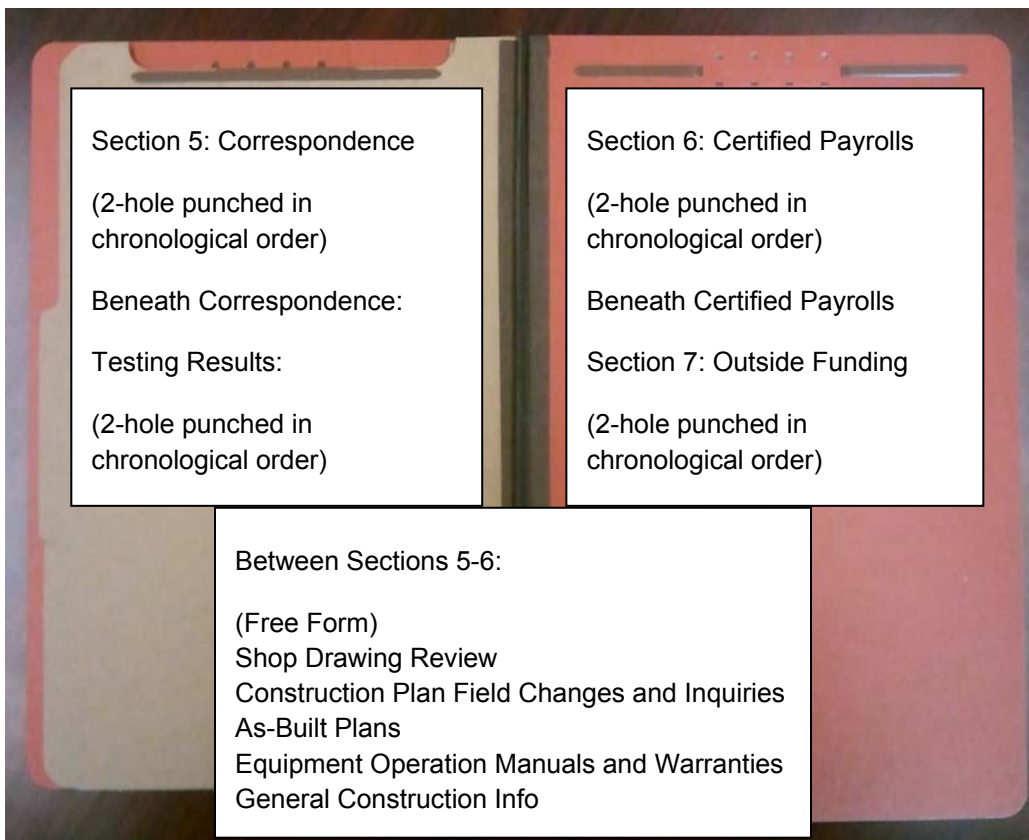
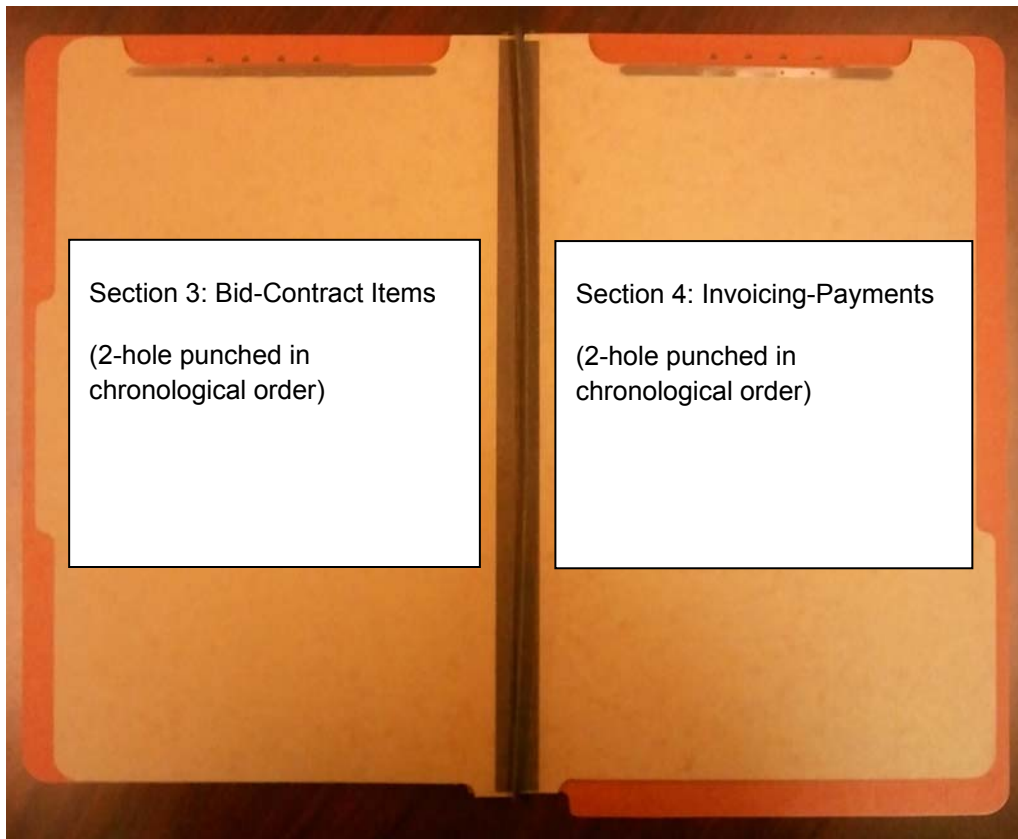
- f. Copy of the Notice to Proceed (NTP)\*
  - g. Copy of Contractor's schedule submittal at Construction NTP\*
  - h. Copies of any change orders\*
- 4. Invoicing-Payments\*
- 5. Correspondence and Project Info
  - a. Testing Results\*
  - b. Shop Drawings and Reviews\*
  - c. Construction Plan Field Changes and Inquiries\*
  - d. As-Built Plans\*
  - e. Equipment Operation Manuals and Warranties\*
- 6. Certified Payrolls\*
- 7. Outside Funding

Copies of all requests for reimbursements\*

\* Indicates this item must be included in the file if relevant to the project.

The hard copy project CONSTRUCTION file shall be arranged in the following manner:



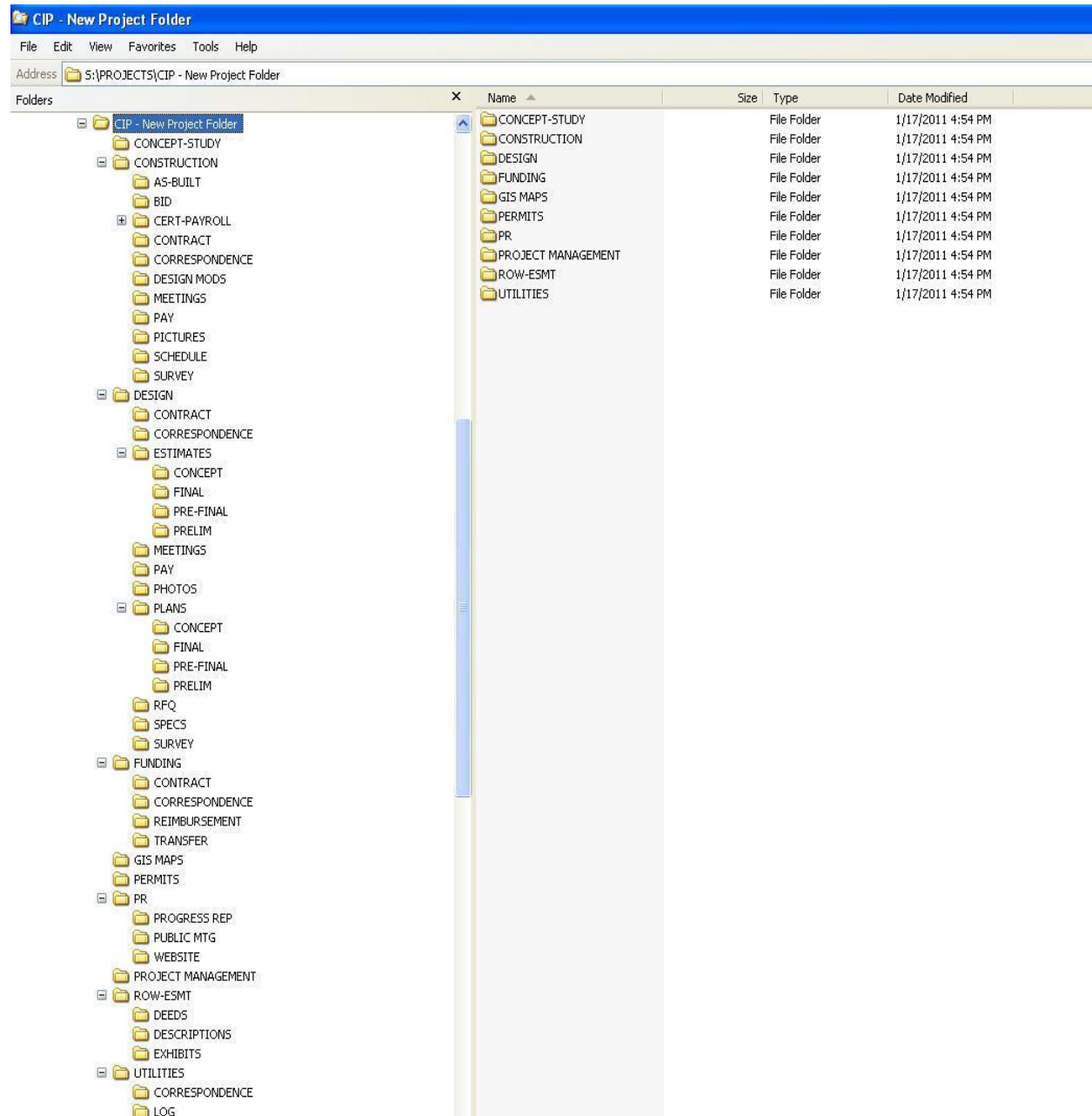


## 9.12.2 SOFT FILES

The soft files refer to all files kept in electronic format on the City's network. Soft project files shall not be stored on any employee hard drives unless for temporary use. The default file folder arrangement for all new CIP projects is located in:

S:\PROJECTS\CIP - New Project Folder

All soft project files shall be maintained by the project manager and stored on the network as the respective project type in S:\PROJECTS[PROJECT TYPE] in the following manner:



## 9.13 STANDARD REPORTS

### 9.13.1 STATUS REPORT

Generated through online system

### 9.13.2 MILESTONE REPORT

See "Public Works Network Drive":\STANDARDS\Project Management\PMM Standard 9.13.2 Project Milestone Report.doc

### 9.13.3 CASH FLOW – COST REPORT

Not yet available

## 9.14 STANDARD LETTERS

### 9.14.1 STAKEHOLDER NOTICE

### 9.14.2 NOTICE-TO-PROCEED (CONSULTANT)

### 9.14.3 SURVEY NOTICE

### 9.14.4 UTILITY NOTICE

### 9.14.5 PUBLIC MEETING NOTICE

### 9.14.6 RIGHT-OF-WAY/EASEMENT OFFER LETTER

### 9.14.7 CONDEMNATION NOTICE LETTER

### 9.14.8 NOTICE-TO-PROCEED (CONTRACTOR)

### 9.14.9 SUBSTANTIAL COMPLETION

### 9.14.10 FINAL ACCEPTANCE

## 9.15 ADDENDA

See "Public Works Network Drive":\STANDARDS\Project Management\PMM Standard 9.15 Addenda.doc

## 9.16 PRECONSTRUCTION MEETING AGENDA

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.16 Pre-Construction Meeting Agenda.doc

#### 9.17 CONSTRUCTION PAYMENT REQUEST

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.17 Construction Payment Request.doc

#### 9.18 CHANGE ORDER FORM

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.18 Change Order Form.doc

#### 9.19 CLOSEOUT FORM

See “Public Works Network Drive”:\STANDARDS\Project Management\PMM Standard 9.19 Close Out Form.doc